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THE ETIOLOGY AND SPREAD OF TYPHOID FEVER.*

VICTOR C. VAUGHAN, M.D.

ANN ARBOR, MICH.

THE TYPHOID BACILLUS.

Is typhoid fever due to a specific, well-defined, easily differentiated micro-organism, or are there several varieties of this germ, differing from one another in cultural, tinctorial, and possibly other properties? For many years after the discovery of the Eberth bacillus bacteriologists generally held that the micro-organism causing typhoid fever constitutes a distinct, easily recognizable species. In this country, at least, the writer stood almost or quite alone in claiming that there are varieties of this germ. In 1892 in a paper read before the Association of American Physicians, and published in the transactions of that Society, I made the following statement: "It probably makes but little difference whether we conclude that these germs are varieties of one species or that they are related species. I know of no hard and fast lines upon which one can decide, to the satisfaction of everyone else, whether two or more germs differing more or less should be classified as species or as varieties. Of one thing I am certain, and that is that I am ignorant of any crucial test or of any combinations of tests upon the strength of which I can say at present that a germ which I may find in drinking water is identical with the so-called typhoid bacillus. I have found in spleens, after death from typhoid fever, germs which differ from the typhoid bacillus obtained from Berlin, and from one another as my bacillus venenosus differs from either or from both."

With the discovery of Gruber and Durham of the phenomenon of agglutination and with its application by Widal to the study of typhoid fever, it was at first believed that this reaction proved beyond all controversy the specific character of Eberth's bacillus; but recently Sternberg[1] has reported the finding in water of colon germs which agglutinate with typhoid serum in the proportion of 1-10,000, and Stern[2] found that in some cases of typhoid fever the blood serum agglutinates colon bacilli in a higher dilution than that in which it acts on the typhoid bacillus. It has been claimed by some that such observations as these can be accounted for by the typhoid patient suffering from a secondary infection with the colon bacillus, but Jatta[3] has shown that in some instances at least blood serum obtained from animals inoculated with pure cultures of the typhoid bacillus has a more markedly agglutinating effect upon the colon than it has upon the Eberth germ. Gruber and Durham in their original communication on the phenomenon of agglutination reported that typhoid serum experimentally obtained in animals even in high dilutions may agglutinate the bacillus enteritidis of Gaertner. It will be seen from this (and additional evidence might be furnished if desired) that the agglutination test has failed to establish the specific character of the Eberth germ.

From time to time atypical forms of the Eberth bacillus, differing from the standard sufficiently to be classed as varieties, have been obtained from persons dead or sick with typhoid fever. Babes[4] was probably the first to report on these atypical forms, all of which were obtained from the organs of typhoid cadavers; but three of the varieties, or very similar bacteria, were also found elsewhere. It is undoubtedly true that the typhoid bacillus when growing outside the body, as for instance in drinking water, departs more or less markedly from the type of this germ as found in the spleen and mesenteric glands after death. Gwyn[5] obtained from the blood of a typhoid patient during life a germ which differed from the typical typhoid bacillus inasmuch as the former produced gas in nutritive media containing glucose. The blood serum from this patient agglutinated this germ in dilutions of 1-200 and was without action upon the typical typhoid bacillus. Schotmuller[6] obtained from the blood of five cases of typhoid fever, in an examination of 68 cases, bacteria which on account of their cultural properties this investigator classifies as intermediate between the colon and the typhoid germ. To sum up this part of our subject, we may say that there are bacteria which are frequently found in drinking water, more rarely in the bodies of persons sick or dead with typhoid fever, which on account of certain cultural manifestations we can not classify with either the typical colon or the typical typhoid bacilli. These intermediate forms have been designated by different names. Generally in the examination of drinking water we call them typhoid-like bacilli. In my report upon the examination of drinking water in relation to typhoid fever published in the transactions of the Association of American Physicians, in 1892, I studied these germs under the general name of *bacillus venenosus aquatilis*, or the poisonous bacillus of water, and in the paper referred to I described four varieties. By others, they have been designated as paracolon or paratyphoid groups, and some have proposed that they be designated as the Gaertner group on account of the fact that the bacillus enteritidis belongs to it. Aided by my assistants I have carried out since the first of January, 1888, a systematic study of all toxicogenic germs found in the samples of

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drinking water sent to the hygienic laboratory of the University of Michigan for examination. During this time we have made careful studies of between four and five hundred samples of water which have been suspected of causing typhoid fever. These studies have led me to the following conclusions:

1. A water containing a typical colon bacillus, one which coagulates milk within from 24 to 48 hours, readily reddens litmus and produces an abundance of gas in glucose media, does not cause typhoid fever. There are several smaller cities in Michigan which send to us monthly their drinking water supply for bacteriological examination, and some of these waters contain the colon bacillus constantly; in fact, this germ never fails to appear when a test is made, and yet there have been no epidemics of typhoid fever among the people drinking these waters.

2. The more markedly a germ found in drinking water differs from the typical colon bacillus, and the more closely it approaches the typical typhoid germ, the more likely is typhoid fever to appear among those using the water containing this germ. I am not ready even after fourteen years of investigation of this matter to lay down any rules by means of which I can say just where the line should be drawn between the colon and the typhoid groups, and I still continue to speak of typhoid-like bacilli, and I have no hesitancy in condemning waters which contain these micro-organisms.

3. I have never found in any sample of drinking water a typical Eberth bacillus. I do not say that such a germ may not be found in water, but I do not believe that the typhoid bacillus preserves its typical characteristics for any great length of time when growing in water. As confirmatory to this last statement, it may be worth while to mention the fact that Remy[7] has found that when the typhoid bacillus is grown in company with the colon germ the former is so far changed that it can not be identified by any means at our command at present, and that it even loses its susceptibility to the agglutinating action of typhoid serum.

When asked whether or not I believe in the specific nature of the Eberth bacillus I have no hesitation in replying in the affirmative. Notwithstanding our inability in many instances to say positively whether a given micro-organism should be classed with the typhoid or the colon bacilli, I am thoroughly convinced that there is really a sharp line of demarcation between the two, and that one does not develop or emerge from the other. I do not believe that typhoid fever ever comes from the colon germ, and I am thoroughly convinced that although the typhoid bacillus may lose many of its characteristics, it is never converted into a colon bacillus. I know of too many people, whole cities full, who are drinking every day millions of colon bacilli without developing typhoid fever to permit me to believe that this germ can cause this disease. When I began my work in the bacteriological examination of drinking water fourteen years ago I condemned for drinking purposes every water which contained the colon bacillus, but an experience of six years convinced me that this opinion was wrong and since 1894 I have not condemned waters which did not contain typhoid bacilli or typhoid-like bacilli, and I have known of no epidemic of typhoid fever arising from the consumption of such waters. On the other hand, I do condemn all waters containing atypical typhoid bacilli. I hope at some time in the near future to be able to make a close study of the toxicogenic germs which have been isolated from drinking waters in my laboratory, and cultures of most of which have been preserved. In fact, one of my assistants is now engaged in a comparative study of these micro-organisms.

The natural distribution of the typhoid bacillus is another subject needing careful investigation. Apparently trustworthy bacteriologists have reported the finding of this organism in the most unexpected places. Its presence has been detected in the soil of localities far removed from the habitation of man, and its isolation from drinking water supposed to be free from contamination has been reported. It must remain for future investigations to decide upon the reliability of these reported findings and to attach to them their proper significance, should they be found to be true.

The Elimination of the Bacillus from the Body.—In a study of the etiology and spread of typhoid fever it is important to ascertain by what avenues the specific micro-organism leaves the body of the infected individual. The exhaled air from the lungs of the typhoid fever subject is germ free, as is probably the case in all of the infectious diseases. Therefore, there is no possibility of this disease being spread by means of the air exhaled from the lungs. However, it must be borne in mind that in the pneumonias that frequently complicate typhoid fever the Eberth bacillus is found in the diseased lungs, and may be eliminated in the matter coughed up, and disseminated through the air in the fine spray that accompanies fits of coughing. It is also possible that the typhoid bacillus may be present in the sputum in advanced cases of this disease, even when there is no lung complication.

There is no positive evidence that the perspiration from one sick with typhoid fever contains the specific bacillus of this disease. It is true that this bacterium may be found on the surface of individuals suffering from the disease, but in such cases the germ owes its presence in this locality to contamination of the skin with the stools or with the urine. The urine of persons sick with typhoid fever may contain the Eberth bacillus, and several observers have found this bacterium in this excretion. In some of these cases it seems probable that the germ causes some destructive changes in the kidney, inasmuch as its presence is accompanied by the elimination of more or less albumin in the urine. However, the bacillus may be abundant in the urine when this secretion contains no albumin, and when there is no evidence of structural disease of the kidney. Persons recovered from typhoid fever may continue for weeks to eliminate in the urine millions of the Eberth bacillus. It sometimes happens that a cystitis occurs as a sequence of typhoid fever. In at least some of these cases the inflammation of the bladder is due to infection with the typhoid bacillus, and this germ in a virulent form may for a long time remain in the bladder and render the urine a possible source of the spread of typhoid fever. Houston[8] has reported a case of cystitis of three years' standing due to the infection of the bladder with the bacillus of Eberth. An interesting point in connection with the report of this case is that the patient never had typhoid fever, but had nursed cases of this disease. I may say parenthetically that a case very similar to this came under my observation a short time ago, and the physician in charge called my attention to its resemblance to Houston's reported case. This patient had never had typhoid fever, but had nursed a typhoid case, and subsequently developed a cystitis. I made a most careful study of this germ, and found

that it had no resemblance whatever to the typhoid bacillus, and undoubtedly belonged to the colon group. Post-typhoidal abscesses may form in various parts of the body and may discharge the Eberth bacillus in virulent form for months or even years. It is unnecessary to add that infected material of this kind should be burned or otherwise disinfected. The necessity for this is evident whether the abscess be due to the typhoid bacillus or to other bacteria.

The most important avenue for the elimination of the typhoid bacillus from the body is through the bowel. Long before the discovery of the specific microorganism of this disease the profession had learned that the stools of typhoid patients contained the infective agent of the disease. It had been frequently observed that epidemics of typhoid fever resulted from the drinking of water contaminated with the stools of those suffering from this disease, and the more intelligent members of the medical profession recommended thorough disinfection of the feces long before the bacillus had been discovered. The elimination of the typhoid bacillus in the stools probably begins soon after its introduction through the mouth. Indeed, it is quite certain that the individual may become the bearer and distributer of the infective agent without developing the disease himself. The specific bacterium finds its way into the small intestines, in the contents of which it multiplies rapidly, and this intestinal culture may be wholly discharged from the bowels without causing any local lesions. Furthermore, it has been shown by the report of several cases that typical typhoid fever may develop and death result without intestinal ulceration. I desire to emphasize the fact that the typhoid bacillus may grow in the intestines of an individual and pass from the same without causing typhoid fever. This is most likely to occur when many irritative saprophytic germs are taken into the alimentary canal along with a few typhoid bacilli. This is probably the true explanation of the unquestionable preventive effect of diarrheas in certain epidemics of typhoid fever. I shall return to this later. The specific germ of typhoid fever may be transported from one place to another in the intestines of a man who is immune, and when cast out in the stools may become a source of danger to others. It is most likely that in some such way as this certain epidemics which appear to originate *de novo* have their start.

The stools of individuals sick with typhoid fever constitute the most important source of the spread of this disease, and it may be stated in a general way that typhoid fever is due to the transference of some part of the feces of an infected individual to the alimentary canal of one susceptible to this infection. In exceptional cases this transference may be quite direct, as when a careless nurse soils her hands with the dejections from her typhoid fever patient and then eats her food without disinfecting her soiled fingers. However, in the great majority of instances the transference is more indirect, and the germs in the infected stool may multiply through many generations and be transported by water or otherwise through considerable distances. It is also probable that the bacilli may pass through an intermediate host, which may be man or one of the lower animals. An immune individual may visit a distant city, the water supply of which is infected with the typhoid bacillus, and this man may carry the infection to his village home where it may be deposited in his normal stool, may find its way into the local water supply, and cause an epidemic of the disease.

Longevity of the Bacillus.—In studying the problem of the spread of typhoid fever, it is of importance for us to know how long the specific bacillus of this disease may continue to live and be possessed of its specific properties. It is also evident that when seeking for an answer to this question we must know something of the conditions under which the life of the organism is to be perpetuated. We have already seen that in the human body the Eberth bacillus may continue to grow and reproduce its kind quite indefinitely. This is known to be the case in instances of post-typhoid cystitis and abscess. I would not have it understood that I believe that cases of typhoid fever are frequently due to infection from this source, and I have mentioned these facts simply for the purpose of showing how long an individual may retain this germ in some part of his body. It is true that there is a possibility of the infection spreading to others from the germ found in these post-typhoidal conditions, but such cases must be rare except when the urine is infected. The living germ has been found in the bodies of men dead from typhoid fever three months after death. However, the longevity of this bacillus in the dead body must vary greatly, and must be dependent upon a number of conditions which are not likely to be the same in any two cases.

So far as the spread of typhoid fever is concerned, the longevity of its bacillus after it leaves the body of the infected man is of greater importance than its possible longevity in the body. When material containing this germ is spread out in a thin layer and exposed to the direct action of the sunlight, the bacilli are soon destroyed. A cloth moistened with a culture of the Eberth bacillus and exposed to the direct sunlight soon fails to yield a growth when a bit of it is placed in a suitable culture medium. However, we must not get too much comfort out of the fact that the typhoid bacillus is killed by an exposure of a few hours to the light of the sun. Practically, typhoid stools are not spread out in thin layers or otherwise placed in a condition suitable for the light to exert a markedly germicidal action on them. It is true that the bacilli, when a small quantity of typhoid stool is smeared on a sheet, may be destroyed by a few hours' exposure to direct light, but the same material rolled in heavy blankets may retain its virulence for many weeks. Complete desiccation soon destroys the Eberth bacillus, but it may retain its vitality in relatively dry material for a long period. Bits of agar or gelatin cultures placed upon cloth, leather, wood, or metal retain the living bacillus for many months, and clothing or bedding soiled with typhoid stools may be the means of spreading this disease. The experiments of Uffelmann[9] show that the bacillus may retain its vitality in layers 4 mm. thick on wood for 32 days, on linen for 62 days, and on woolen cloth for 80 days.

The experiments made for the purpose of determining the longevity of this bacillus in the soil have yielded widely different results. This is explained by the fact that no two investigators have conducted their experiments under exactly the same conditions. When cultures of the Eberth bacillus are mixed with dust or pulverized earth of any kind and completely desiccated the germs speedily die, but when the desiccation is not complete, the bacilli may retain their vitality for weeks and months. Since desiccation soon destroys the germ of typhoid fever, it has been inferred that this disease can not be spread by particles of dust carried through the air, but we know that particles of dust thus carried are by no means always completely desiccated. Currents

of air may and do carry through great distances considerable particles of moist dust. Considerable interest is attached to the question of the vitality of this organism in the soil about sinks and privies containing typhoid stools. After the Franco-German war it was found that typhoid fever continued to prevail for several years in garrisons in which soldiers sick with typhoid fever had lived. An interesting case of this kind is the following: An epidemic of typhoid fever began among German soldiers located in a certain garrison on April 4, 1872. During the war these barracks had been occupied by French prisoners, among whom typhoid fever had prevailed. Large sinks had been filled with the undisinfected stools of the prisoners, and when filled, these sinks, located just outside the barracks, were covered with thin layers of earth. The water of a well near by had probably become infected from these sinks and caused the epidemic in the garrison in 1872. After the appearance of the epidemic the old sinks were cleaned out and the well thoroughly disinfected. Four days later the last case of typhoid fever occurred in this garrison. Some interesting experiments have been made in England for the purpose of determining the longevity of the typhoid bacillus in the soil. Martin took specimens of dirt from various sources, some being obtained from localities where it was known that the soil was largely contaminated with organic matter, and where typhoid fever had been epidemic, while others were obtained from places which had not been contaminated by sewage or in any other way. These samples were pulverized, placed in Erlenmeyer flasks and sterilized, after which they were inoculated with cultures of the typhoid bacillus. It was found that the Eberth germ grew luxuriantly in the polluted earth, and that flasks containing this soil showed growths of this micro-organism after the lapse of 105 days. The results were different in the case of the unpolluted earth, inasmuch as the germ not only failed to multiply, but after a short time died out.

Investigations of Klein indicate that the process of nitrification as it goes on in soil favors the growth and development of the typhoid bacillus. Klein had ascertained, as others before him had done, that sewage is not a suitable medium for the growth of this germ, but subsequently he found that by the addition of nitrates to crude sewage the latter is converted into a more suitable medium for the growth of this organism. In fact, in this modified sewage the typhoid bacillus grows abundantly. Robertson selected a grass-covered field for his investigations on the longevity of the typhoid bacillus. Patches of turf were cut and removed from the subjacent soil. In one locality the ground immediately below the turf was watered with a culture of the bacillus, after which the turf was replaced. In another, nine inches of the earth beneath the turf was removed and the Eberth bacillus sown at this depth, while in the third experiment the germ was placed at a depth of eighteen inches, the soil which had been removed being carefully replaced after depositing the germ. One hundred and thirty days after this had been done the soil under the turf of the infected localities was removed and examined. Robertson found that in all cases the bacilli had not only retained their vitality, but had multiplied. In the place where the germ had been buried eighteen inches beneath the surface it had grown through the earth above it where it was found widely and abundantly distributed. Some of these plantings were made in July, 1895, and during the cold months of the following winter no typhoid bacilli could be obtained from the soil in which they had been deposited, but during the following spring these spots were treated with dilute sterile broth in order to furnish material for the growth of the micro-organisms and furthermore for the purpose of rendering the conditions similar to those existing in cases of pollution with sewage; and it was found on the following June, nearly a year after the time of the planting of the germ, that those localities, which had been properly fertilized with the beef broth, furnished abundant crops of the micro-organism, while areas which had not been so fertilized failed to show any growth. These experiments indicate that a polluted soil when once infected with the typhoid bacillus may retain the infection for a long time, and this finding is quite in accord with military experience, inasmuch as it has frequently been found that a healthy regiment may speedily develop this disease after occupying a site vacated by an infected command. The history of typhoid fever among the troops during the War of the Rebellion furnishes instances of this kind, one or two of which may be mentioned. The 23d Massachusetts left that State in November, 1861, and was encamped at Annapolis, Maryland, until Jan. 6, 1862, the record of health being good up to that time. On March 14, 1862, this regiment arrived at New Berne, North Carolina, with the health of the regiment still good, notwithstanding exposure to many hardships. On arriving at New Berne the regiment occupied an encampment, including tents, abandoned by a Confederate regiment that had suffered severely from typhoid fever. This disease soon broke out in the Massachusetts regiment and during the month of April, 1862, 300 cases developed and 22 deaths occurred.

On March 7, 1862, the 10th New York Cavalry moved into barracks at Perryville, Maryland, which had recently been vacated by the 14th U. S. Infantry, the latter regiment having suffered largely from typhoid fever during the month of February. On the arrival of the New York regiment the barracks were thoroughly cleaned, drains opened, and improved, and an excellent spring, supposed to be exempt from any source of pollution, was found. It should be stated that the 14th Infantry had not used water from this spring, but had taken it from a well only six feet deep. Notwithstanding the precautions taken by the New York regiment typhoid fever soon made its appearance. Other illustrations equally striking might be given from the histories of military campaigns.

It will be seen from what has already been stated that both experimental evidence obtained with pure cultures of the bacillus and epidemicological observations in the study of typhoid fever show that infected things and places may remain sources of danger for weeks and months. These facts have not been sufficiently impressed upon the medical profession, and the necessity for careful disinfection of soil, clothing, bedding, etc., has not been appreciated.

Inasmuch as epidemics of typhoid fever are frequently spread by means of drinking water, the longevity of the bacillus in this medium is of importance. Many experiments have been made for the purpose of obtaining information on this subject, but the results have been somewhat contradictory. In distilled water and sterilized drinking water obtained from springs, wells, rivers and lakes and kept at ordinary room temperature without exposure to direct sunlight, the typhoid bacilli may rapidly multiply and may retain their vitality for three

or four months. In ordinary unsterilized water the conditions that influence the life of the typhoid bacillus are many and variable. In the first place the chemical composition of the water is not without effect upon the longevity of the germ. As has already been stated, sewage ordinarily does not form a good medium for the growth of the Eberth bacillus, but as Klein has shown, the addition of nitrates renders the growth abundant, and that processes of nitrification are constantly going on in polluted water is shown by the presence of nitrates and nitrites. Evidently the kind and number of other germs present in infected water have much to do in determining the longevity of the typhoid bacillus in such mixed cultures. Some of the ordinary water bacteria undoubtedly hasten the death of the typhoid bacillus owing to the fact that the conditions of growth are more favorable to the former than to the latter, but experimental evidence on this point is not always conclusive, because the water bacteria are present in relatively much greater numbers than the typhoid bacillus, and failure to detect and isolate the latter is not always convincing proof of its absence. Westcott[10] reports a case of apparently great longevity of the typhoid bacillus in water. He states that he was able to trace nineteen cases of typhoid fever to a well drawing its supply from a sewage contaminated area. On closing the well the epidemic ceased, but on reopening it for the purpose of obtaining water for laundry purposes another case occurred. The well had been closed twenty weeks, and during this time the conditions were such that the introduction of further contamination was improbable.

In certain liquid foods, such as milk, bouillon and broth, the typhoid bacillus may retain its vitality for months. This is true whether the food be sterilized or unsterilized at the time of the introduction of this organism. When deposited on solid food, such as potatoes, bread, and meat, the typhoid germ may retain its vitality as long as such foods are likely to remain palatable.

THE DISSEMINATION OF TYPHOID FEVER.

1. *Transported by Man.*—Man himself is the most active agent in the dissemination of this disease. He may carry the specific virus in his alimentary canal, on his person, or in his clothing, and in this way the germs may be transported hundreds and thousands of miles and may be widely distributed. For instance, an infected recruit may plant the specific bacillus in every latrine in his regiment before he is suspected of having the disease himself. The history of mining expeditions also gives us instances of the transportation of typhoid fever to places far remote from the permanent habitations of man. Indeed, the history of typhoid fever justifies the statement that wherever and whenever men congregate and live without adequate provision for disposing of their excrement, there and then typhoid fever will appear. This seems to be so universally true that many men who have been engaged in the study of the epidemiology of this disease have come to agree with Murchison in his pythogenic doctrine concerning the origin of this disease. This theory supposes that typhoid fever may be generated independently of a previous case by the fermentation of fecal and other forms of organic matter. This conclusion resulted from the difficulty generally experienced in tracing the introduction of the disease, and we now know that it is erroneous. The board appointed by the Surgeon-General to study typhoid fever in the encampments of the United States in 1898, and of which the speaker was a member, and whose report has not been published, was able to trace typhoid fever into every encampment in which it became epidemic.

2. *Dissemination through the Air.*—Is typhoid fever ever disseminated through the air? This is a question to which diverse answers have been given. Our present knowledge of the etiology of this disease gives no support to the old belief that it may be caused by the inhalation of gases from decomposing organic matter. Infection can result only from the specific germ, and no amount of decomposing matter in which this organism is not present can cause the disease. Again, the specific cause of typhoid fever is a particulate body and not a gas. Inhalation of gases from putrid material may cause intoxication, but not infection so long as these gases are free from micro-organisms. Many cases reported by older writers in which typhoid fever was believed to be due to the inhalation of gases from putrid matter were, as we can now see, not instances of infection. As an illustration of this we may mention the Clapham epidemic, reported by Murchison, and frequently quoted. Out of 22 school boys who watched the opening of a pit containing a large amount of decomposing matter, and which had been closed for some years, 20 were within three hours prostrated with vomiting and diarrhea. Two died, one within twenty-three and the other within twenty-five hours. Postmortem examination showed acute swelling of Peyer's patches and the solitary follicles, with slight ulceration of these structures, together with congestion of the mesenteric glands. These were diagnosed as cases of typhoid fever, but we now know that they were instances of acute poisoning with noxious gases. The oldest cultures of the typhoid bacillus are free from disagreeable smells, and infection is not likely to result from ingestion of putrid material. I wish to emphasize the difference between the question now before us, as to whether or not typhoid fever may be disseminated by infected particles of dust carried through the air, and the older idea, that it was spread by the agency of gases given off from putrid material. Such gases are generally germ free. On the other hand, a wind may carry partially dried infected particles of dust, which may be deposited on food or inhaled and cause typhoid fever. However, I am reaching a conclusion before giving the arguments. Germano,[11] after reviewing the literature of this subject, endeavored to decide the question concerning the possible dissemination of typhoid bacilli through the air experimentally. In his investigations Germano found that typhoid bacilli mixed with dust from different sources and thoroughly desiccated speedily die, and he concluded that air infection through many hundred meters is impossible. In my opinion Germano's investigations confirm what was already well known, that the typhoid bacillus is speedily deprived of life by desiccation, but they do not convince me that dissemination of the living germ in particles of partially dried dust or bits of infected fecal matter may not be carried even through distances of many hundred meters and deposited upon the food, in the drinking water, or inhaled. Neisser[12] has shown that dust infected with the typhoid bacillus may be carried by a current of air moving at the rate of 1.7 cm. per second through a distance of 60 cm., and there deposited with the germs still possessed of vitality. However, he concludes that since the germ is not transported to a distance of more than 60 cm. by the air moving at the rate which generally prevails within a room, that typhoid fever can not be considered

a dust disease. It will be seen that this conclusion has reference only to the possibility of the typhoid bacillus floating through the air of a closed room, but even within doors the air often moves with a velocity many times greater than 1.7 cm. per second. Especially is this true when the movement of air within a room is influenced by draughts from windows, doors and ventilating flues. Partially dried typhoid stools on the floor may be sufficiently comminuted to form an infected dust which may float through the air, be deposited on food, find its way into uncovered receptacles of water or milk, or be directly inhaled and find lodgment in the nose and pharynx, and finally reach the intestines. The danger of air infection is greatly increased in military life where food and drink are often exposed for hours to an atmosphere laden with dust and possibly infected with the typhoid bacillus. At Chickamauga in 1898 the surface of the ground about many of the regimental encampments was so covered with fecal matter that it was impossible to walk through these places without soiling the feet. So prevalent was typhoid fever that much of this fecal matter must have contained the Eberth bacillus, and it seems hardly possible that the great clouds of dust in which the men lived could have been free from this infection. The shell roads through the encampments at Jacksonville were ground by the heavy army wagons into an impalpable dust many inches thick. Along these roads scavengers carted in half barrels fecal matter generally infected, and the contents of these tubs often splashed over and fell into the dust. On each side of these roads soldiers were encamped, and many mess tables were in close proximity. Local whirlwinds sometimes caught up large quantities of dust and carried it considerable distances. After seeing these things I am of the opinion that we can not exclude dust as a probable carrier of the typhoid infection, notwithstanding the fact that it would probably prove a very difficult thing to scientifically demonstrate that the disease was disseminated in this way.

3. *Influence of the Soil.*—There is an old theory concerning the relation of the soil to the causation of typhoid fever which still has many advocates. This theory supposes that decomposing organic matter in the soil passes through a ripening process by means of which the typhoid poison is either generated *de novo* or is greatly increased in virulence. Reference has already been made to the pythogenic theory of Murchison, and this in a more or less modified form has been accepted and is advocated by many prominent epidemiologists, especially those with military experience. It is believed that different soils vary in their adaptability to harbor, grow and ripen this poison. The believers in the pythogenic doctrine may be divided into two groups: 1. those who hold that soil contaminated with any fecal matter will generate the poison; 2, those who believe that the introduction of the specific bacillus is necessary, but that this undergoes a ripening process in the soil by means of which its virulence is greatly augmented. Scientific support of the theory of the ripening of the typhoid poison in the soil has been found in the investigations of the late Professor Pettenkofer into the etiology of typhoid fever in Munich. During the first half of the last century typhoid fever was continuously endemic in that city. Munich is situated on a bed of gravel and marl, and during the time mentioned fecal matter was deposited in pits and allowed to percolate into the soil from which the drinking water, collected in shallow wells and surface springs, was taken. With our present knowledge of the etiology of this disease we would suppose that with the above-mentioned conditions the drinking water was specifically contaminated. However, Pettenkofer, from his very careful studies of the distribution of the disease, came to the conclusion that its prevalence was not due to contaminated water. After many years of careful and skilful investigation he found that the prevalence of typhoid fever varied inversely with the height of the ground water below the surface. The nearer the ground water came to the surface, the less typhoid fever. With the fall of the level of the ground water the number of cases increased. He concluded from this that the deeper layers of the soil contained putrefactive material in which the typhoid poison undergoes a ripening process, and that the ripened germ passes from the soil into the air and is inhaled by susceptible persons. When the level of the ground water is high, the putrefactive material in which the ripening is supposed to be going on is covered by the water, and its escape into the air is prevented, while a fall in the ground water leaves the putrefying substances uncovered, and the poison is exhaled from the soil. Pettenkofer believed that the specific poison must be present, but that this undergoes in the soil changes by means of which its virulence is augmented. If this theory be true it should hold good for other cities as well as for Munich, and numerous other investigators have found that elsewhere this supposed relation between ground water and the prevalence of typhoid fever is by no means constant. Indeed, there are so many exceptions to Pettenkofer's rule that his theory must be abandoned as an explanation of the origin of epidemics of typhoid fever. There is no reason for believing that in the ordinary movements of the air from the pores in the ground to the atmosphere the velocity is sufficient to carry dust laden with bacilli. Certainly such a transference of the bacillus from the deeper layers of the soil to the atmosphere in the form of dust must be of most exceptional occurrence if it ever happens. It is proper to state in this connection that some epidemiologists accept that part of Pettenkofer's theory which provides for the ripening of the poison in the soil, but believe that the ripened and highly virulent bacillus finds its way into drinking water.

4. *Dissemination through Drinking Water.*—There can be but little doubt that in civil life the great epidemics are caused by the specific infection of drinking water. The danger in drinking water was recognized long before the discovery of the specific bacillus, and indeed epidemics had been unquestionably traced to contaminated water supply. The most frequent contamination of water with typhoid material results from the introduction into the water of the feces or urine of some infected person. After this has happened the rapid multiplication of the organism in water permits the speedy infection of a large volume. Moreover, in flowing streams the specific bacillus may be carried long distances. Variations in the temperature of this medium do not apparently affect the virulence of the germ. It may be frozen in ice and remain in this condition quite indefinitely without any loss in potency, and it is equally unaffected by alternate freezing and thawing. The fact that typhoid fever is frequently disseminated through drinking water is so well known that I will not take up any space in giving instances.

5. *Transportation on the Person, or in Clothing.*—That the infection of typhoid fever is often carried on the hands or in the clothing of nurses or other attend-

ants; there can scarcely be any doubt. This is probably one of the most frequent means by which the disease is spread through a family after its introduction. The mother, or other attendant on the sick, handles the food of the well without disinfection of the hands. Superficial ablution with soap and water is not sufficient to destroy the vitality of this organism. Thorough disinfection with special attention to the material collected under the finger nails is absolutely essential. At one of the division hospitals at Camp Alger in August, 1898, the members of our board observed the nurses, many of whom went directly from their duties in the typhoid wards to their mess tents, handle the food eaten by themselves, and pass articles to their neighbors without even washing their hands. Another practice in the army was undoubtedly accountable to a greater or less extent for the spread of typhoid fever among the soldiers in the various encampments in 1898. It was customary in several of the camps to take a fresh detail of men from the line each day as orderlies in the hospital. These men, at least the majority of them, were wholly ignorant of the nature of infection; they had never had any training as nurses; they knew nothing of the desirability or necessity of being careful in order to prevent infecting themselves, and they knew less about means of disinfecting their hands soiled with typhoid discharges. At the close of the day these men were returned to their company tents and the next morning a new detail of the same number went through the same routine. More effective means for the spread of typhoid fever could scarcely have been devised. Many of the so-called cases of prolonged incubation after exposure to tyhoid fever can be best explained by the supposition that the infected material is carried on the person for some time before it finds its way into the alimentary canal. Experimental evidence shows that pure cultures of the typhoid fever bacillus will retain their virulence when poured upon cotton, linen, or woolen cloth for from two to three months, and it is altogether possible that the infection may be carried in a blanket roll for a much longer time. The personal and bed linen of patients sick with typhoid fever when soiled with discharges from the kidneys or bowels should be immediately immersed in a properly prepared disinfecting solution. When such articles are thrown aside without previous disinfection flies may carry the infection from the stains to articles of food, and moreover, after the material dries, handling these articles may scatter the infected material through the air in the form of fine dust.

6. *Dissemination by Flies.*—Our board in investigating the etiology and spread of typhoid fever in 1898 gave the following reasons for coming to the conclusion that flies were the most active agents in the spread of typhoid fever among our soldiers:

1. The latrines contained fecal matter specifically infected with the typhoid bacillus.

2. Flies alternately visited and fed upon this infected fecal matter and the food in the mess tents. More than once it happened when lime had been scattered over the fecal matter in the pits, flies with their feet covered with lime were seen walking over the food.

3. Typhoid fever was much less frequent among members of messes who had their mess tents screened than it was among those who took no such precaution.

4. Typhoid fever gradually died out in the fall of 1898 in the encampments at Knoxville and Meade, with the disappearance of the fly, and this occurred at a time of the year when in civil practice this disease is generally on the increase.

CONDITIONS INFLUENCING THE SPREAD OF THE DISEASE.

Influence of Season.—The prevalence of typhoid fever is apparently influenced largely by season. This certainly is true in the north temperate zone in Europe and in America. The disease is most prevalent during late summer and fall, and is less prevalent during the spring months. As a rule, the increase in frequency begins to be observable in July and continues according to the season and local conditions to increase until the last of October or November. In December, as a rule, the decrease in frequency is noticeable and continues until the minimum is reached in March, April and May. The researches of Flint, Wood and others showed this to be true in the United States soon after the medical profession learned to distinguish between typhus and typhoid fevers, and more recent authorities in this country have confirmed this observation. Curschmann, Fiedler and others find the same to be true in Germany, and Murchison in his classical studies of typhoid fever showed that season has a like effect on the prevalence of this disease in Great Britain.

While it is probably generally true that typhoid fever is most prevalent in the fall, great epidemics of this disease do not always occur at this season of the year. In fact, the greater prevalence of typhoid fever in the fall of the year is not so marked now as it was thirty years ago, because of the altered conditions under which we live. This relationship of typhoid fever to season has always been more evident in a rural than in an urban population. At present the most striking epidemics of typhoid fever are those that occur in cities and are due to an infected water supply. Season affects these epidemics to the extent to which it modifies the chances of water infection. Many such epidemics within recent years have occurred in the spring of the year during the months in which, according to the general rule, the prevalence of typhoid fever should be at a minimum. Water infection is likely to occur when the snow melts and the ice breaks up, and infected material deposited on the snow or ice during the winter finds its way into the water supply. Epidemics of typhoid fever due to infected water supply are quite independent of season except as stated above. On the other hand, epidemics due to insects and those caused by the dissemination of the germ in the form of dust are more likely to occur during late summer and autumn. The same is probably true of some epidemics in rural places due to infected wells. Contaminated material is more widely and easily disseminated in summer and fall than during other seasons of the year. In the summer time or in the early fall a typhoid stool thrown on the surface of the ground may be scattered far and wide by the wind, may be carried on the feet of men or animals, may be washed into wells or springs, and in short its wide dissemination is more likely to occur at this season of the year than at any other. These facts, in my opinion, sufficiently explain the relation of typhoid fever and season, so far as such a relation exists.

Influence of Age.—That typhoid fever is more likely to occur in persons of certain age than in others younger or older is shown by voluminous statistical evidence. However, we must not be too hasty in arriving at conclusions on this point. First, I will make some general statements and will then briefly discuss the same. Curschmann states: "Undoubtedly early adult life especially predisposes the individual to typhoid fever.

Individuals from 15 to 35 years of age are in greatest danger of this disease. In my experience at least four-fifths of all cases have occurred among people within these limits, and more than half (about 56 per cent.) have been between 15 and 25 years of age. Between 30 and 35 years the percentage begins to fall, and from 35 to 40 it sinks rapidly. After the 50th year the percentage or morbidity of this disease falls to a fraction. In old age typhoid fever is seldom seen. During the first year of life, as is the case with most infectious diseases, typhoid fever is rare. From the 1st to the 5th year morbidity from this disease increases. From the 5th to the 15th year the disposition to typhoid fever is increased, and is greater than it is during the period from 35 to 40 years."

Murchison reported 52 per cent. of his cases among individuals from 15 to 25 years of age. Fiedler found 58.8 per cent. of his cases to range from 20 to 30 years of age, while only 3.4 per cent. were over 40, and 0.7 per cent. over 50.

This apparent predisposition of early manhood to typhoid fever may be at least partially explained. In the first place it is at this time of life than man is most inclined to roam about, obtaining his water and food from the most diverse sources, and it must be evident that his chances of infection are greater than either earlier or later in life. In the second place it is probable that many of those who have reached 40 years of age have acquired a certain immunity to the disease without ever having developed it in recognizable form. I shall give some evidence later tending to show that short diarrheas often give at least temporary immunity to this disease. How long this immunity may last in different individuals we have no means of positively determining. The infant, taking its nourishment exclusively from its mother's breast, has but little opportunity of being infected with typhoid fever. As the child grows up and seeks its food and drink from other sources danger of typhoid fever infection increases in direct proportion to the diversity of the sources from which he draws his supply. During the period of life when he mingles most largely and most promiscuously with other men, the danger of infection is increased. Later in life he becomes tethered by his habits; he visits fewer places, cares less for the society of strangers, and the chances of infection are decreased. While sickness from typhoid fever is much more frequent in early manhood, the percentage of death among cases is much greater late in life. In general, other things being equal, the percentage of mortality increases with advancing years, and ranges from 2 per cent. in early childhood to more than 50 per cent. in old age. The mortality in persons from 15 to 35 years of age averages 7.5 per cent., but of course varies considerably in different outbreaks and is modified by the individual condition of patients.

Influence of Sex.—Hospital statistics taken alone indicate that typhoid fever is more prevalent among men than women. However, this is not true and the apparent greater prevalence among men as shown by hospital figures is due to the fact that more men than women are treated in hospitals. Moreover, all hospital statistics do not show a greater percentage of cases among men. In London from 1848 to 1861, according to Murchison, 2431 cases of typhoid fever were treated in the fever hospital. Of these 1211 were males and 1221 were females. There is not the slightest reason for believing that sex has any influence upon susceptibility to typhoid fever. It is probably true that on the whole a larger number of men than women have the disease, but this is due to the fact that men are more frequently exposed to infection. They travel about more. They take their food and drink from more diverse sources, and consequently the chances of infection are greater.

Pregnancy and the puerperal state apparently give some degree of temporary immunity to typhoid fever or at least diminishes susceptibility to this disease. On this point Curschmann makes the following statement: "Greissenger finds typhoid fever to be very rare in the puerperal state and believes that nursing mothers are especially protected against this disease. In this he agrees with Rokitansky, and I myself have only seen typhoid fever appear twice in women in the puerperal state and very seldom during lactation." Pregnancy is also supposed to lessen susceptibility to this disease, but the probabilities are that the relatively small number of cases observed among women during pregnancy and the puerperal condition is due to the fact that during these times women are less exposed to infection.

Influence of Fatigue.—Bodily fatigue and mental worry apparently increases susceptibility to typhoid fever. The effect of fatigue is especially observable in armies. However, there are certain points connected with the study of this subject that are not altogether clear and there is a possibility of falling into error in formulating conclusions concerning the relation between fatigue and typhoid fever. In the first place exhaustive physical exercise, as for instance after prolonged forced marches with raw troops, may cause a continued fever which resembles typhoid fever clinically, but is wholly different in its etiology and pathology. This fever of exhaustion may continue for two or three weeks and is frequently mistaken for typhoid fever, but it never occurs in epidemic form, that is, it never spreads to those who have not undergone the fatigue. It has been observed that within two or three days after a forced march or other exhaustive exercise the number of typhoid fever cases increases. The short time elapsing between the exercise and the appearance of the fever does not justify the belief that infection occurred during or after the exercise, but in many of these cases infection must have occurred before the physical exercise, and the only effect attributable to fatigue is that of causing the more speedy development of the disease in persons already infected. It is true that physical exhaustion may and probably does increase susceptibility to typhoid fever. This is brought about by lowering the resistance of the body to infection.

Influence of Social Position.—Typhoid fever is not more prevalent among the poor than among the rich. Indeed, it frequently prevails more extensively among the better-to-do classes than among those suffering from poverty. It was frequently told us while making our inspection of camps in 1898 that companies recruited from the wealthier classes had more typhoid fever than those from the working classes. In some instances we found this apparently true; in others it was only an opinion not supported by facts. In some instances men having money indulged more largely in the purchase of articles of food and drink from outside venders, and in this way the dangers of infection were increased. However, in civil practice it is observable that typhoid fever is not a disease of poverty, but on the other hand, it is quite as likely to afflict those who are pecuniarily well-to-do. Furthermore, this disease is more prevalent among the well-nourished and robust than it is among

those of more delicate constitution. I have already endeavored to point out that man is most susceptible to this disease in early adult life when he is supposed to be possessed of the greatest vitality. The full-blooded, vigorous man is quite as likely to fall a victim to this disease as his anemic weak brother. So far as the influence of vocation is concerned, there is no evidence that one occupation more than another creates a special predisposition to this disease, except in so far as the occupation brings the individual into more frequent and dangerous communication with the specific cause of the disease. Physicians, nurses and laundresses show a large percentage of typhoid fever, but this is due to the fact that their work brings them into close contact with the stools of typhoid fever patients.

Influence of Cold.—It is quite widely believed that exposure to cold increases susceptibility to typhoid fever. In most reported cases supposed to illustrate this point the fever follows so closely upon the exposure that the infection must have occurred previously. The probabilities are that in most of these cases the supposed exposure to cold arose from the chilly sensation likely to accompany the prodromal stage of this disease.

Influence of other Diseases.—The Influence of other diseases upon susceptibility to typhoid infection is interesting, but is also one about which we must be slow to draw conclusions because the evidence is likely to be misleading. Curschmann states that the acute infectious diseases, especially during the febrile stage, protect against infection with typhoid fever. He has also observed that during convalescence from other acute infectious diseases there seems to be partial and temporary immunity to typhoid fever. These opinions are based upon personal observations in several great epidemics, notably that of Hamburg from 1885 to 1888, in which 15,804 cases were reported. However, we must bear in mind that one sick of scarlet fever or some other acute infectious disease is not for the time being exposed to typhoid infection to the same extent that healthy people are. The Hamburg epidemic was due to an infected water supply, and it is more than likely that individuals suffering at that time from other acute diseases drank proportionately less unboiled water than healthy people did. However, there may be truth in Curschmann's observations. I simply suggest caution in accepting them as conclusive. The same great clinical teacher has observed that persons with tuberculosis in an advanced stage seldom become infected with typhoid fever in spite of the fact that tuberculous patients are often kept for long periods in the same hospital wards with typhoid fever cases. He thinks, however, in these instances the immunity to typhoid fever should be chiefly attributed to the emaciation accompanying tuberculosis, and he states that typhoid fever is also rare among those suffering from malignant diseases, from constitutional disorders, and especially from diabetes. The belief that the immunity to typhoid fever observed in advanced cases of tuberculosis is due to emaciation rather than to specific infection with the tubercle bacillus is supported by the observation that infants with latent tuberculosis fail to show this immunity to typhoid fever, and he adds that every physician of experience has unfortunately had opportunity to observe the rapid progress of tuberculosis in such cases during illness with typhoid fever. He states that individuals suffering from chronic nervous disease, in so far as these maladies occur among those of susceptible age, show no immunity to typhoid fever.

Certainly with our present knowledge concerning the etiology of typhoid fever, no one will hold that this disease is ever caused by errors in diet or by the consequent gastric or intestinal catarrh. However, there still remains the question whether or not acute catarrhal conditions of the stomach and intestine place these organs in a better condition for the reception and retention of the typhoid bacillus. When the three members of our board began the investigation of the cause and spread of typhoid fever all of us believed that special attention should be given to the study of the relation between preceding gastro-intestinal disturbances and typhoid fever. At that time we were of the opinion, which seems to be quite generally held, that acute disease of the gastro-intestinal tract renders the individual more susceptible to subsequent infection with typhoid fever. However, our studies forced us to come to the following conclusions concerning the relation between typhoid fever and preceding temporary intestinal disorders, including those diagnosed as diarrhea, enteritis, gastro-enteritis, gastro-duodenitis, intestinal catarrh, gastro-intestinal catarrh, gastric fever, and simple indigestion.

1. The temporary gastro-intestinal disturbances of May and June (it will be remembered that the troops went into encampment late in April or early in May and continued in the service until September or October) had but little effect upon subsequent infection with typhoid fever. We mean by this that men who are reported as having such temporary disorders during the time mentioned were found to be no less and no more susceptible to subsequent infection.

2. The temporary gastro-intestinal disturbances of July and August gave a certain degree of immunity against subsequent infection with typhoid fever.

3. The majority of men who developed typhoid fever did not report at sick call previous to the appearance of this disease.

4. In a considerable percentage (a little more than one-third) of the cases which are reported as having been preceded by some intestinal disturbance the preceding illness was so closely followed by typhoid fever that we must regard the former as having occurred within the period of incubation of the latter.

In order to show the evidence upon which the above given conclusions are founded, I quote from our unpublished report the following statements:

We have investigated the medical history of each of 12,484 men at Chickamauga. With the names of these men before us we have ascertained the complete medical history of each one so far as the regimental and hospital records show.

Of these 12,484 men, 5237 had some intestinal disturbance. As has already been stated, the names given to these intestinal disorders by the surgeons were numerous and diversified, but we have included all under the general head of gastro-intestinal disorders.

The 5237 men who had some intestinal disorder furnished 672 cases of typhoid fever. This shows a percentage of 12.83. The 7247 men who had no recorded intestinal disturbance furnished 2091 cases of typhoid fever. This shows a percentage of typhoid fever among these men of 28.85.

These figures show that the men who had temporary intestinal disorders furnish less than one-half as many cases of typhoid fever as did the men who had no preceding intestinal disorder, but the above given figures are misleading because of the 672 cases of typhoid fever that occurred among men who had had some intestinal

disorder, in 265 the recorded intestinal disorder is so closely connected with the subsequent typhoid fever that it must be regarded as a part of the prodroma of typhoid fever.

A corrected statement would read as follows: 4972 men who had had some preceding intestinal disorder furnished 407 cases of typhoid fever. In other words, the percentage of typhoid fever among the men who had had temporary intestinal disorders was 8.18; 7512 men who had had no preceding intestinal disorder furnished 2356 cases of typhoid fever. In other words, the percentage of typhoid fever among the men who had had no intestinal disorder was 31.36. The facts might be stated in another way as follows: Among 2763 cases of typhoid fever, 2356 were not preceded by any intestinal disorder, or the percentage of cases of typhoid fever which were not preceded by any intestinal disorder was 85.27.

To my mind the only explanation that can be given to the immunity, which was apparently due to gastro-intestinal disorders, is that these temporary disturbances were typhoidal.

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A SYNOPSIS OF THE SANITARY CENSUS OF MANILA.

HARRY L. GILCHRIST, M.D.

First Lieutenant and Assistant Surgeon U. S. Army; Late Chief of the Sanitary Department, Board of Health, Manila, P. I.

MANILA, P. I.

Early in January, 1901, the President of the Board of Health of Manila, under the authority of the Provost Marshal General, ordered the sanitary census of the city to be taken and a report of the same to be made. The undertaking was difficult in the extreme. Obstacles peculiar to Oriental cities were met on every side.

The work, however, was essential for the better government and sanitation of the city. Manila had now been in the possession of the United States a little over two years. At the time of our entrance the city was in the usual filthy state characteristic of most Spanish cities, and was also in the midst of an epidemic of smallpox, which was everywhere apparent. One of the first orders issued by the Commanding General was the establishment of a Health Board, and the suppression of the smallpox epidemic was the first thing that received the attention of the board. A vaccine farm was established and a hospital erected for the treatment of these cases. Later the dirty streets, alleys, parks and public buildings were attended to. It was not until August, 1899, that the Board of Health was thoroughly organized, and Major Guy L. Edie, Surgeon, U. S. Army, was chosen as its president. Under his personal supervision the different departments were established, reputable physicians and midwives were employed to attend to the indigent sick, and free dispensaries located throughout the city; a uniformed sanitary brigade, a corps of public vaccinators, and a system of street scavenger carts was organized. Competent inspectors of markets, foods, buildings, etc., were employed.

As the work progressed and the duties in the different departments increased, it became apparent that little was being accomplished, owing to the utter lack of information concerning the location, modes of life and surroundings of the inhabitants. To remove these difficulties and also to ascertain the population of the city the sanitary census was ordered.

To understand more clearly the contents of this article and the scope of the work accomplished, attention is called to the accompanying map, a photograph of the original sanitary map of Manila.

Owing to the irregular lay of the city, its densely crowded condition, and the mixed nature of its population, the work of taking the census could not have been accomplished by following the methods adopted in the larger cities of the United States. After numerous consultations with those thoroughly acquainted with the subject the following plan was adopted:

1. The division of the city into districts, sections and blocks.

2. The work to be accomplished by sections separately, a census-taker to be assigned to each block.

3. In order to secure accuracy, a numbered and illustrated chart of each block was made, showing the location of every house within the block for checking off purposes in the final compilation.

4. The staff of census-takers to be divided into day and night forces for reasons hereinafter stated.

It was not till Jan. 25, 1901, that the printing and other preliminaries necessary for the work were ready. Meantime a corps of intelligent natives, selected as census-takers from the excellent sanitary brigade, were carefully drilled and instructed in all that appertained to their duty. On this date the actual census-taking was begun, and so energetically was the work prosecuted that by the end of June it was entirely completed.

OBSTACLES TO BE OVERCOME.

It was the original intention to record each family and the names of its members, but it was early discovered that this was impossible, owing to the fact that a large proportion of the native population had no family names. A record in sexes, numbers and races was substituted, this being the only feasible thing to do. Another great difficulty, one which often proved a serious hindrance to the work, was the characteristic suspicion, or superstition, with which the census-taking was regarded.

The homeless population, including those who worked on the bay during the day and slept under promiscuous shelter along the river front during the night, was a third difficulty which the census-takers found hard to overcome, owing to their great numbers and roving disposition. On one occasion more than 300 males were counted sleeping under the porches and around the large piles of boxes and barrels surrounding the government "go-downs."[1] These men worked along the river front and in the quartermaster's warehouses and obtained their subsistence from the numerous street venders scattered throughout the district. As this class could not be interviewed by the day force, it was the duty of the night men to discover and enumerate them.

THE CITY BOUNDARIES.

The city boundaries were those laid down by the military governor. Commencing on the north, they extend from a line drawn through the Boca de Vitas to Lico, a

1. Go-downs are large one-story warehouses usually built of brick or stone and covered with corrugated iron roofs. They are use for storing hemp, rice and sugar.

part of which is included, then across to the San Juan river, passing just to the outer side of the Chinese Hospital, taking in Block Houses 4, 5, 6 and 7; to the San Juan river to its mouth; the Pasig river to the outlet of the Estero Concordia; the Estero Concordia to Block Houses 10 and 11; then the Estero Tripa de Galinas to the road passing Block House 14 to Manila bay on the south. (Map is not extensive enough to show these.)

In compiling this work some very insanitary places have been discovered, brief mention of which will be made later.

Before entering into a detailed description of the various districts of the city attention is invited to the following quotations of Notter and Firth. Under the subject of "Tenement Houses" and under the Public Health Act of 1875, Section 90: "The minimum free air space allowed for rooms used for sleeping purposes should be 300 cubic feet for every person exceeding 10 years of age, and 150 cubic feet for those under that age," and "for all apartments not used for sleeping purposes the minimum air space should be 300 to 400 cubic feet, and for every 80 cubic feet of air space within a room there should be one square foot of window or door space." Munson's "Military Hygiene," 1901, says in regard to barracks in the tropics: "Each man should be allowed 90 feet of superfices and 1800 cubic feet of air space."

Attention is now called to the various districts into which the city is divided, and which may be compared to wards in American cities.

San Nicolas.—The San Nicolas district was chosen as the starting place, being the largest in population. It is, however, the smallest in area of any district in the city. The district lies on the northern side of the Pasig river at its mouth. In area it occupies about one-fourth of a square mile, but has a population of 46,280 inhabitants, living in 5181 buildings, none of which are more than two stories high; 828 buildings are in good condition, but contain only a small portion of the population, while they cover a large part of the area of the district. The rest of the buildings are poorly constructed and ventilated, and in most cases, horribly overcrowded. Commencing at the Bay, one of the worst blocks in the district is that known as the "Farola." Here were found nearly 1800 people, living in small rudely constructed shanties, built over the Bay, back of the river front. This was the starting-point of the last cholera epidemic which visited the city ten years ago. Working gradually toward the center of the city, another very insanitary place is the double block of nipa shacks[2] occupying the territory between Calles Vives, Lavezares, Principe and the Bay.

The first section of this block faces on Calles Vives, and has an area of 20,250 square feet, on which are crowded 60 nipa shacks, the only shelter for nearly 800 people. The block is extremely unhealthy and insanitary, due not only to the crowded condition, but to the situation. The ground being very low, the tide washes over the greater part of it, and the place is always in a filthy state. The second section of the block is in even a worse condition than the first, it being not only subject to tide washes, but is the outlet of the overground sewer on Calle Principe, the main drainage of the whole district. The area of this section is 35,154 square feet, and has a population of 1776 people living in about 80 shacks. The inhabitants are mostly poor native fishermen.

Calle Ylang Ilang is a very narrow street, only 16 feet in width, extending from Calle Jaberanos to Calle Laverares, a distance of one-fourth of a mile. It is built up on both sides with solid running one and two story dilapidated tenements, occupied almost entirely by Chinamen who operate opium dens, chow stands and disreputable houses. These dwellings are appallingly overcrowded. In apartments of not over 10 feet front, 8 feet high and 20 feet deep, from 40 to 50 Chinamen were found huddled together on the floor and shelves surrounding the room. The ventilation of these places is wretched, the only opening in the most of them being the small door in front, which is generally closed with the setting sun. Plague has existed in this district ever since its first appearance two years ago, and still furnishes a large number of cases. At the corner of this street and Calle Jaboneros there is a large 2½ story tenement house occupied principally by Chinese. On the ground floor is the usual opium dens and dirty eating stands; on the second and third floors are disreputable joints and cheap lodging places. This building contains nearly 800 people. The sanitary arrangements of the place are very poor. There is only a limited supply of water, and practically no sewerage system. The blocks bounded by Calles Jaboneros, Camba, San Nicolas and Asuncioni; Calles San Fernando, Elcano, Jaboneros and Asuncion; the Chinese row on Calle Jaboneros near Calle Madrid; Calle Jaboneros between Calle Elcano and Santo Christo; different sections of Calle Santo Christo, Calle Fundidor; the district back of the city slaughter house, and numerous other places, space not permitting mention, are in a terribly crowded condition —25 to 50 people having been found crowded together in small ill-ventilated rooms of not over 1800 cubic feet, with no other ventilation than the small door used as an entrance. Within the district are a large number of warehouses and go-downs, nearly all of the army store houses, including the quartermaster and commissary depots, sub-station board of health,[3] the Port Captain's office, the new steel market house, and the San Fernando police station. The streets are clean and in good condition; they run at right angles to each other, are well illuminated at night by electric lamps, and are sprinkled during the dry season. The rather limited water supply is obtained from the city water works,[4] numerous wells and cisterns. The closets used are of the old vault system and are very insanitary.

There is practically no sewerage system except the open gutter drains which empty into the nearby esteros, and in many cases these drains are in bad condition, accumulated in stagnant pools, and seething with germs of disease.

2. A nipa shack is a small thatch-covered house, built of bamboo framework fastened with pegs and tied with rattan. It is covered with the dried leaves of the palm. These houses are constructed in various shapes and sizes, and are generally raised from 4 to 8 feet above the ground on bamboo posts. Entrance is gained by means of a small bamboo ladder. The doors and windows are constructed of like material.

3. These stations are established throughout the city, and are in telephonic communication with the main office of the Board of Health. All sanitary work connected with the various districts is done through these offices. Ambulances and disinfecting wagons are attached to each. They are in charge of a competent chief inspector, and from four to eight sub-inspectors assist him in the various duties connected with the sanitation of the district.

4. Manila's limited water supply is piped in from the Mariquina river, a distance of nine miles. During the dry season this stream is very shallow. Many small barros or villages are built on its banks (above the intake), and the water from this stream is used for all their purposes. A recent examination of the water obtained from different places above the intake was found by Dr. Calvert to be polluted with bacteria. The wells are very shallow —not more than three to five feet deep—and the water obtained from them is brackish and inpalatable. The numerous cisterns existing are generally built of brick or stone and cement lined, and are above ground. They are of sufficient capacity to retain water enough to last from one wet season to the next. This water is considered to be the best.

Tondo.—This district lies just north of San Nicolas and extends to the city limits on the north. Nipa shacks predominate throughout, with here and there a few good buildings. The district has a population of 33,003, nearly all being Filipinos; there are 2112 Chinese. The populated part is the southern section, very few living in the northern two-thirds. Within the district are numerous ruins of the fire of Feb. 12, 1899, when the insurgents tried to burn the city; many caribou sheds, a large cemetery, the terminus of the Manila and Dagupon Railroad, the Tondo Cathedral, the Quartel de Meisic and the old Tondo Market, which is the largest and most insanitary place in the city. This market is composed of many badly constructed, closely packed and insanitary nipa shacks, where from 5000 to 10,000 natives congregate every market day. The northern section of the district is composed mostly of swamps, tide-flows and rice paddies. The rebuilding in the section destroyed by the fire has been carried on without restriction, to such an extent that some streets have been obliterated entirely. There is no sewerage in this district, the usual results prevailing. The water supply is obtained from the city water works, numerous wells and cisterns and street carts. Few closets exist, and those are of the vault system, the natives using the bay, beach, swamps, rice fields, and in a few cases the hog scavenger closet is still retained. Owing to the lack of a crematory in this part of the city, the rubbish, refuse, etc., is dumped near the center of the district, between Calle Lemery and Salcedo, giving rise to very offensive odors. The district is poorly lighted, the only illumination on many streets is that furnished by the natives themselves by means of small cocoanut-oil lamps suspended in the front of their houses. During the rainy season a large part of the district is inundated.

Binondo.—This district, which embraces the business section of Manila, joins San Nicolas on the east and is about the same in area, extending almost to the San Lazaro Hospital. It has 34,361 inhabitants, and 1469 buildings of all descriptions. The district is thickly inhabited, and contains the largest Chinese population of any in the city. Viewed from a sanitary standpoint, Carvahal Alley is easily the worst place in the district. This alley is about one-sixth of a mile long, and varies in width from 4 to 10 feet. On either side are one and two story dilapidated buildings, occupied by hordes of Chinese who conduct opium dens, chow stands, etc. False floors exist in all these places to the great detriment of sanitation and the health of the occupants. In the rear of these places are shacks of all varieties, furnishing shelter to large numbers. Plague has been prevalent here since its first appearance.

Many other sections in this district are in an overcrowded and insanitary condition, notably the blocks bounded by Calle, San Vicente, Neuva, San Jacinto and Dasmarinas.

The solid running buildings facing the numerous alleys which extend from Calle Rosario to Calle Neuva are not only in an overcrowded condition, but these thoroughfares being only 3 or 4 feet in width, sunshine is an unknown factor; hence these places are always dark and damp, and extremely unhealthy. Sub-station No. 2, of the Board of Health, the postoffice, two theaters, the Orient and English Hotels, the Insular Cigar Company, the large Binondo Church, many warehouses and go-downs are in this district.

The sewerage system is very poor, only a few small sewers existing on some of the larger streets, which empty into the nearby esteros and Pasig river. The closets are of the old vault and flush vault system, mostly the former, and generally in bad repair. The water supply is obtained from the city main, and a few wells and cisterns. The streets are clean, well illuminated, stone paved and in good repair.

Santa Cruz.—This district extends from the Pasig river and Estero San Jacinto to the city limits on the north, and contains some good buildings, many nipa shacks, San Lazaro Hospital, two theaters, Santa Cruz Church, Convent, and Cemetery, the Plague Hospital, Sub-station No. 3 of the Board of Health, and the Bilibid Prison. The population of the district is 34,333; four-fifths are Filipinos, the remainder are mostly Chinese. There are 2140 buildings in the district; Calle Bilibid, a very wide street, divides the district in the center. The buildings on the south side are in good condition; those on the north are mostly nipa shacks. The most thickly populated parts are Calle Bulumbavan, along the Estero San Jacinto, Calle de Lacoste, Calle Trinidad and Calle Dolores. The majority of the buildings in this section are of good material, two stories high, but all densely populated. The Chinees joints are on Calles San Jacinto, Obando and Dolores, the usual insanitary conditions in Chinese quarters prevailing. The streets are clean and in good condition. The district is well illuminated at night. There is no sewerage system. A few much neglected sewers exist in some streets. These empty into the adjacent esteros. The water supply is obtained from the city water main and numerous old wells, cisterns and water venders. Most of the closets are of the vault system and very insanitary. In the north section the open fields, rice paddies and esteros are used for closet purposes. Numerous cases of plague have been found in this district. The ground is very low. At high tide during the rainy season the district in many places is covered with water ranging from six inches to two or three feet.

Quiapo.—Quiapo extends from Calle de Bilibidon on the north, to the Pasig river on the south. In the district are 16,282 people, the greater part being Filipinos. There are 2905 Chinese. The remainder of the population is made up of Americans, Spaniards, etc. There are 1205 buildings, nearly one-half of which are constructed of good material and two stories high. Nipa shacks constitute the greater part of the remaining buildings. The section west of the Cuytido is thickly populated. Here are many small, ill-ventilated, densely overcrowded stores and stands.

In the northern section are numerous rice fields and pasture lands, which are inundated during the rainy season. The streets occupied by Chinese are Calles Echague and Villalobos, and are in the usual Chinese fashion as regards sanitation. The electric light plant, San Sebastian church, the Oriental cigar factory, and numerous warehouses are in this district. The only sewerage is a few surface drains on some of the streets. The few closets are mostly of the vault system. The water supply is obtained from the city water works. Most of the streets are in good order, clean and well illuminated at night.

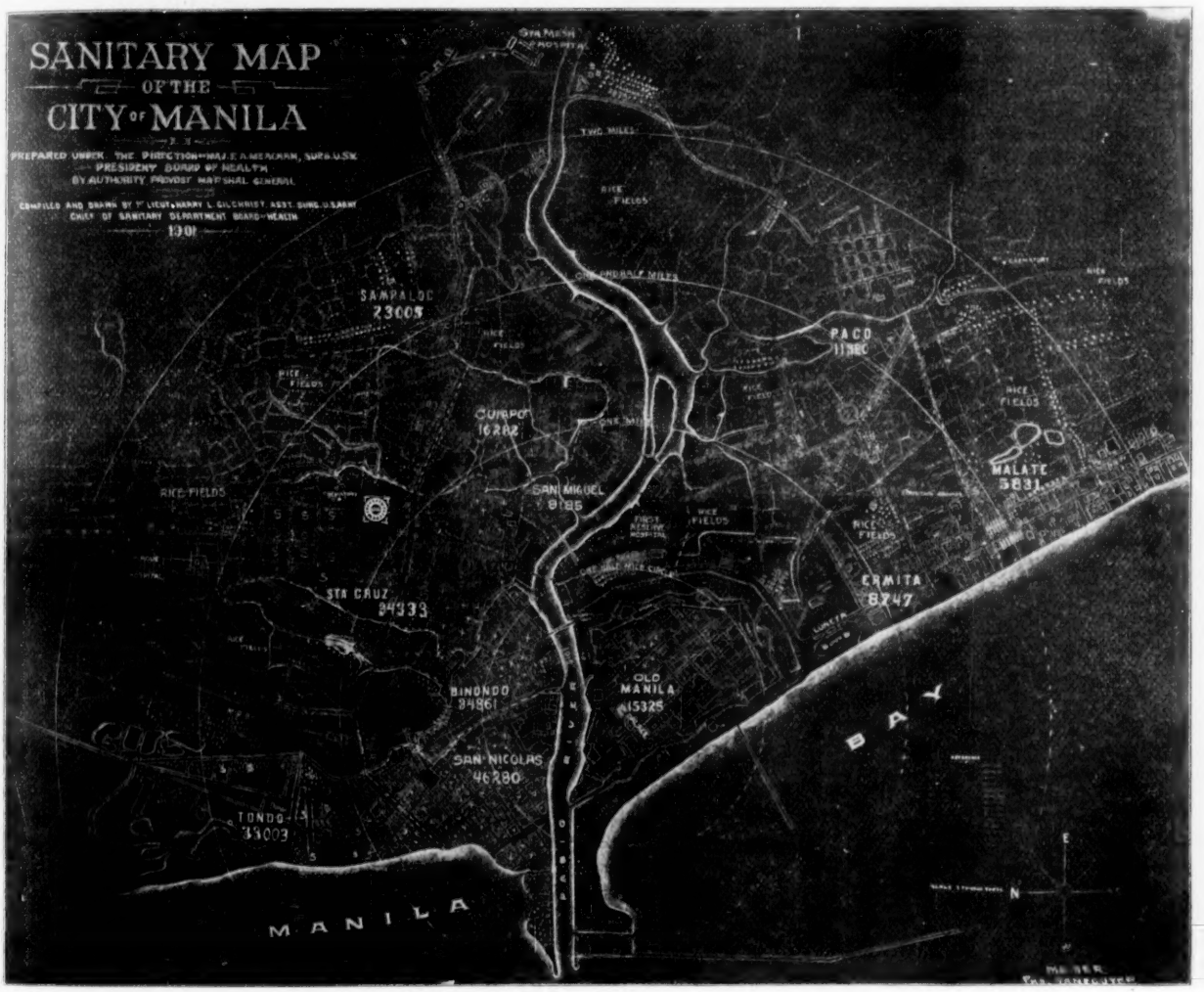
Sampaloc.—This is the most eastern section in the city and takes in all that territory east of the Calle Iris and Santa Cruz district. It has a population of 22,005 and contains 2229 buildings, all but 300 being native shacks. The district is the largest in area north of the Pasig river, and has many fine residences, the Sta Mesa Hospital, vaccine farm (where most of the virus used in the islands is prepared), sub-station No. 5 of the

Board of Health, the terminus of the Manila street railroad. Manila driving park, and many disreputable houses. The main streets are wide, well illuminated and in good condition. The side streets are narrow and neglected. There is no sewerage system. In the better class of residences a few flush closets exist, the natives using the rice fields, esteros, etc. During the wet season a large portion of the district is inundated.

San Miguel.—The district of San Miguel extends from the Pasig river on the south to the Esteros San Miguel and Sampoloc and Sta Mesa on the north. The population is 8185, of whom 1075 are Chinese. Of the 715 buildings two-thirds are shacks. The thickly-populated section is along Calle San Miguel and part of Calle

Old Manila or Walled City.—This district comprises the territory within the walls, and is the old city of Manila. It has a population of 15,325, nearly 3000 of whom are Americans. There are 307 buildings, nearly all of good material and two stories high. Within the district are numerous hotels, churches, convents, schools and colleges, the Governor-General's palace, headquarters Provost-Marshal General, and the Intendencia buildings and the Manila Medical University.

This district is entirely covered with buildings, no vacant lots existing. Some of the buildings are densely crowded. The streets are narrow, but well kept and well illuminated. The area of the district is less than one-fourth of a square mile. The poor sewerage system



REFERENCES.—Figures below names of district indicate population of district. Crosses indicate plague sections. S—888, shacks or nipa houses. Dotted lines indicate boundary limits. Network throughout the outlying districts represents rice paddies.

Novalieres. The Chinese section is on Calle San Miguel.

Within the district are numerous fine residences, headquarters of the Department of Luzon, the Governor-General's residence, Nurses' Home, Women's and Children's Hospital, San Miguel brewery, and several lumber yards and sheds. There is no sewerage system. Most of the water is obtained from the city water works. The closets are of the flush vault system, the better class of residences having the flush closets, which empty into the nearby Pasig river. A large whisky distillery and several tobacco factories are in the district. The streets are in good condition and well illuminated at night.

drains into the insanitary moat[5] just outside the old walls. The water is obtained from the city water works, wells and cisterns. The closets are of the flush and vault systems, mostly of the latter and all very insanitary.

Ermita.—Extends from the walled city and Bagumbayan on the north to Calle Herran and an imaginary line continuing to the Ermito Estero on the south. It embraces that section sometimes called Conception. The population is 8747, many of whom are Americans.

5. The moat is the walled-in trench, varying in width from 30 to 300 feet, which surrounds the old wall on the outer side. This moat, which formerly contained eight feet of water, has been allowed to fill up until at present it is in a condition similar to the many esteros, filled with deposits of all kinds and very insanitary.

There are 1238 buildings, of which 970 are of the nipa variety.

Within this district are the Luneta, Malcon drive, Ermita church, sub-station Board of Health, Hospital No. 3, a large observatory, exposition grounds, First Reserve Hospital, and the very dilapidated and insanitary market adjoining, with many fine residences along the bay shore. Numerous rice fields are in the eastern portion. The nipa section is the only crowded part of the district. The main streets are wide and in good condition. There is no sewerage system. The water is taken from the city water main. The closets when present are of the flush vault system, the natives using the esteros and rice fields. Some of the main streets are lighted by electric lamps, but, in the native section, the only illumination at night is the small cocoanut-oil lamps.

Malate.—This district extends from the southern boundary of the Ermita to Paco on the east, to Manila bay on the west, and to the city limits on the south. The population is 5831. Over three-fourths of the 748 buildings are nipa shacks. This is the largest district in area south of the Pasig river. The resident portion is along the bay shore. There are no thickly crowded sections. In the districts are the Second Reserve Hospital, Malate barracks, several fine residences, Fort San Antonio, cable station and the Malate church. This being an outlying district, the greater part of it is under cultivation. The streets are in good repair, and the main thoroughfares well lighted. The city water works and numerous wells supply the water. The closets when present are mostly of the vault variety. There is no sewerage system.

Paco.—This district occupies the southeastern section of the city of Manila, and is one of the largest south of the Pasig river. It extends from the boundaries of Ermita and Malate to the city limits, with the exception of the most eastern part, which is known as the village of Pandacan. The population is 11,380, and the number of houses is 1380, of which 1278 are constructed of nipa. There are no thickly populated parts. In the district are many ruins of the fire of Feb. 12, 1899, also some fine residences and the works of the Germinal Tobacco Company, Paco cemetery and a large crematory.

Pandacan.—This district is practically a small village just outside the second mile circle. The population is 2839, all of whom are Filipinos. There are 543 buildings, most of which are nipa shacks, built closely together. A large church and convent are in the district. There is no sewerage system. The Pasig river and some wells supply the water.

The city of Manila is built on a low tract of land consisting of an alluvial deposit at the mouth of the Pasig river; a network of unsightly and insanitary esteros or canals practically make it a city of islands, none of which are over four feet above high-water mark. These esteros are utilized for various purposes and are subject to tide changes. At full tides they are used for the navigating of small bancos, scows, rafts, etc. At low tides they are beds of filth and muck, giving rise to the most sickening odors; at all times they are used as sewers and catchalls for the immediate vicinity, also for washing, bathing and in some instances for drinking purposes. The latitude of Manila is 15 degrees north. The temperature is from 65 to 97 F. in the shade. April, May, June and July are the hottest months; December and January the coolest. The greatest rainfall occurs in July, August, September and early October. The average rainfall during the year is 75 inches, and it rains 130 days out of the 365. The inhabitants are mostly Filipinos and Chinamen, with a scattering of Spaniards, French and Chinese mestizos or halfbreeds.

The principal articles of diet are rice and fish. The clothing, which is light, is prepared from the fiber of hemp, pine-apple and cotton. The Filipino is very clean about his person and attire, but entirely the opposite regarding his place of abode and general surroundings. As most of the native houses are built from 4 to 8 feet above the ground and the floors of the slat variety, the disposal of slops, refuse and fecal matter was a simple problem until American occupancy, the ground beneath being a seething mass of corruption and generally a good stamping place for the family pigs that grew and fattened there until sufficient size to be taken to the market. (This method of disposal of slops is frequently spoken of by Americans as the hog-scavenger, a few of which are still in operation in some of the outlying localities.)

The Chinese, on the other hand, especially the coolies, or laborers, are filthy in regard to their person, dress and general surroundings, and are great believers in darkness, confinement and absence of water, air and sunshine. They generally live in dark, damp and ill-ventilated rooms, containing numerous false floors or shelves.

The prevailing diseases are: malarial fever, called by the natives calenturia; tuberculosis of the lungs; marcesuela or convulsions, which is very fatal among children; dysentery, diarrhea, beri-beri, bubonic plague and an occasional case of smallpox.

The population of Manila has been greatly exaggerated. Former estimates gave from 300,000 to 600,000 people, but on studying the city and noting the location and small living accommodations, the vast areas of unutilized ground, rice fields, etc., one will see that it could not possibly have contained the number of people thought to have existed there. Taking the Palace within the Walled City as a center, nearly the entire population of Manila lies within the mile and a half circle, which would make it three miles from north to south, and, as this center is near the shore of the bay, one-half of the area is water. Two-thirds of the population occupy a strip of land one and a half miles long by half a mile wide, just north of the Pasig river. South of the Pasig river, the area being about the same as that of the north, contains but 44,122 inhabitants, of which nearly 15,325 occupy the space inside the old walls or the Walled City. As the limits of Manila are nearly five miles from north to south, it will be seen that a large part of the city is covered with rice paddies and cultivated fields.

Its sanitary situation under the present condition is only fair. Until a sewerage system is established, the unsightly and insanitary esteros filled up, the old moat surrounding the Walled City cleaned out, and many of the old dilapidated buildings removed and improvements made on the others, especially in regard to their crowded state, the sanitary condition of the city can not be improved upon.

As a result of the taking of the sanitary census immediate steps were taken under authority of the Provost Marshal General to enact such laws and regulations as would gradually place the city in a better state of sanitation, especially in regard to the overcrowded condition.

The photograph accompanying this article was taken

from the Sanitary Map, size 8x9 feet, which was made and compiled at the time. It is an accurate map of the city and shows the location of every house, hut, outhouse and insanitary place in the city; separate sanitary cards were made also for each premise, containing not only a complete record of sanitary information but a plan of the same.

The total population of Manila, exclusive of officers and men of the army and navy, was found to be 244,732, and the number of buildings 19,463, divided as follows: Americans, 8461; Filipinos, 181,361; Chinese, 51,567; Spaniards, 2382; British, 201; German, 226; Swiss, 78; Portugese, 52; Japanese, 203; Turks, 16; French, 66; Indian, 53; Russian, 13; Italian, 13; Australian, 4; Arabs, 12; Chilean, 3; Malaysian, 5; Cuban, 10; Mexican, 5; Uruguay, 1. Total, 244,732.

The total number of buildings are the following: Good buildings, 3739; poor buildings, 1135; small buildings, 1333; shacks, 13,256. Total, 19,463.

AGREEMENT BETWEEN THE HISTORY OF YELLOW FEVER AND ITS TRANSMISSION BY THE CULEX MOSQUITO (STEGOMYIA OF THEOBALD).*

CHARLES FINLAY, M.D.

HAVANA, CUBA.

(Read on Feb. 19, 1902, before the Pan-American Sanitary Congress.)

The early history of yellow fever, notwithstanding the scarcity and vagueness of the data referring to the first 150 years after the discovery of America, enables us to establish a very plausible connection between the earliest undoubted epidemics of yellow fever, described by Du Tertre and by Cogolludo in the fourth decade of the seventeenth century, and the previous ones which, under the names of "plague," "pestilence" and "malignant fevers," usually attacked the newly-arrived Spaniards at Santo Domingo, Terra Firma and Vera Cruz, ever since the conquest of Mexico in 1519, as also between those same fevers and the "modorra-illness" or "pestilential modorra" which had been recorded, under similar circumstances, at Santo Domingo and at Darien, during the first twenty-five years after the discovery.[1] If this connection be accepted, the unavoidable inference must be that, since the American Indians have no natural immunity against yellow fever and that disease had never been known among Europeans before coming to America, there must have existed, before the discovery, endemic foci of yellow fever on this side of the Atlantic offering climatic conditions suited to the development of the yellow fever mosquito and enabling that insect to perform its functions as transmitter of the disease. As may be gathered from the contemporary chronicles of Las Casas, Oviedo and Herrera, such endemic foci did exist in the Island of Santo Domingo (Hispaniola) and on the coasts of Venezuela (Nueva Andalucia) and Columbia (Castilla de Oro) ever since settlements were made in those places by newly-arrived Spaniards. As a rule, the disease broke out in its full force during the summer months and, after a lull during the cooler season, it would break out again the following summer, until all the new-comers, having once suffered an attack remained thereafter proof against that illness.

The most significant statement which I have been able to find in order to connect pre-Columbian epidemics suffered by the aborigines with those which subsequently attacked the Spanish invaders, occurs in the Chronicles of Herrera,[2] which he published in 1599, eighty years after the conquest of Mexico. In chapter 6 he explains "how it happens that the country of Vera Cruz and that northern coast is so sickly * * * from April till September, at which time those who go out in the sun to attend to their business are taken sick * * * * while in the months from November till March, the weather is cold * * * * and, the earth being then dry, the country becomes as healthy as it is in Mexico (City), and those who arrive at that time are safe not to suffer." Chapter 8 is headed: "About the cocolitzle sickness, and wherefor the northern coast of New Spain is so scantily peopled," and it opens thus: "It has already been stated that the city of Vera Cruz and all the northern coast is sickly, owing to its hot climate which makes the illnesses more deadly * * * and children can not be reared in it because any disorder gives them fever; this is why the population there is so scanty. If in Montezuma's time its population was so numerous, notwithstanding that the same general diseases (epidemics), called "cocolitzle" prevailed, and in some years more than in others, as happens now, that was due to the fact that Montezuma, in view of the mortality and scarcity of inhabitants in that part of the country, used to collect from Mexico and other parts, where the population was numerous, eight thousand families * * * and sent them to the places where the cocolitzle had been severe, giving them houses and lands and exempting them from taxes for a term of years; in this way the coast was repeopled, whenever it became necessary, with those who were not needed in the places from which they had been taken. So also the name cocolitzle has been given to general diseases of smallpox, which they have suffered, and to universal plagues."

I wish to call particular attention to Herrera's remark: "as happens now," referring, no doubt, to the year 1598 in which he wrote—whereby he identifies the "pestilence" which, up to that time, the newly-arrived Spaniards suffered every summer in Vera Cruz, with the "cocolitzle" which in Montezuma's time attacked the inhabitants of the high plateaux around the City of Mexico who had been sent to repeople the coast upon which Vera Cruz was subsequently built. Both diseases were annual and prevailed in the summer season, as does now yellow fever in the same spot, after the lapse of three and a half centuries. It was not, therefore, without good reason that a belief prevailed among the inhabitants of

* My own experiments of yellow fever inoculation, ever since 1881, when I decided to submit my mosquito theory to a practical test, have always been performed with the domestic day mosquito of Havana. I had previously consulted the distinguished Cuban naturalist, D. Felipe Poey, about the classification of the samples which I showed him, and he informed me that from similar samples which he had taken to Paris in 1817 or 1820, the species had been named "culex mosquito" by Robineau Desvoidy. D. Felipe had previously called the insect "mosquito de Cuba" (Cuban mosquito). The experiments made by Drs. Reed, Carroll, Agramonte and Lazear were started in June, 1900, with a brood hatched from eggs of the identical insect which, at Dr. Lazear's request, I had handed to him. All the successful experiments have hitherto been made with that particular mosquito.

From a medical point of view, it would be quite illusory to admit, *a priori*, that other mosquitoes, whose external and functional characteristics differ materially from those of the culex mosquito of Desvoidy, share with the latter the faculty of transmitting yellow fever, even though they should happen to belong—from the naturalist's standpoint—to a common group or species, such as the Stegomyia fasciata, of Theobald.

So far as I can judge from the written descriptions by former classifiers, the culex mosquito (Desv.), culex teniatus (Wied.), and culex elegans (Fic.) represent but one identical insect, and must therefore be considered as the "yellow-fever mosquito." About the other synonyms included in the Stegomyia fasciata species, in the absence of direct experiments of inoculation, the faculty of sexual reproduction between males and females classed under different headings, should be resorted to before prejudging their capability of transmitting the disease.

1. "Epidemiologia primitiva de la fiebre amarilla," in La Cronica medico-quirurgica de la Habana, May 15, 1897.

2. Chronicles of Herrera, 1599, Chaps. 6 and 8, Book 9, 4th Decade.

Vera Cruz that yellow fever had existed there ever since the foundation of the City—as Humboldt was informed when he visited the place at the beginning of the nineteenth century.

If Montezuma had in view the protection of the coast of his empire against foreign maritime invasions, when he adopted a measure which seemed well calculated to maintain alive the cocolitzle infection, he must have relied upon its success and cherished the hope that, after having by his dilatory policy induced Cortés to remain on that coast from April till the middle of August, the Spanish leader would have been forced to abandon his enterprise in consequence of the havoc which the Mexican cocolitzle would have made among his soldiers. That Cortés had not to submit to the sad fate, which befell General Leclerc in Santo Domingo in 1802, must be attributed to the circumstance that the 600 Spaniards who came with him had previously gone through epidemics of "modorra" at Darien and at Santo Domingo; another proof being thus afforded that the two names belonged to one identical disease.

On the American coast and islands—with the exception of the Island of Cuba—where the Spanish discoverers made their first settlements, those who came for the first time to America had always to reckon on the "modorra" or "pestilence" which, as a rule, attacked them in the summer months. The propagation of the infection was not generally limited to the seaboard, as happened on the coast of Vera Cruz; this difference arising from the peculiar orography of the Mexican territory, on the one hand, and, on the other, from the circumstance that the modorra or cocolitzle disease, like our modern yellow fever, was only transmissible within moderate altitudinal limits above the sea level. Mexico, indeed, differs from the other places mentioned above by the fact that its shores toward the Atlantic consist of a comparatively narrow strip of lowlands at the back of which rises a continuous wall of highlands, altogether beyond the reach of those pestilences which I claim to have identified as our modern yellow fever. That condition of things did not occur along the shores of Santo Domingo (Hispaniola) nor of Darien, so that no obstacle existed there to prevent the propagation of such epidemics from the coast to the interior. The Indian population was very numerous, before the discovery, on the islands as well as upon the continent. They lived in crowded huts, forming separate villages—some of them with 1000 or 2000 inhabitants, of peaceful habits and devoted to agriculture, but ever ready to change their dwellings or to scatter in the woods whenever danger was apprehended from enemies or from some contagious disease. Under these circumstances it will be readily understood how, upon the occurrence of an epidemic of yellow fever, many would escape from the contagion, but the germ would spread over a wide area, and, by reason of the mild winters, the infection would not be easily extinguished.

The final confirmation of the rôle which appertains to the culex mosquito Desv. (now included in the genus Stegomyia of Theobald), in the transmission of yellow fever, has now been sanctioned by the experiments of Drs. Reed, Carroll, Agramonte and the lamented Dr. Lazear, at Quemados de Marianao during the winter of 1900, afterward by those of Dr. Guiteras at the Experimental Station of Las Animas, last summer, and finally by the splendid practical results obtained by the Chief Sanitary Officer of Havana, Major W. C. Gorgas, during the epidemic-year which has just been completed. With those facts and the ones which I had gathered in former years, it is now possible to determine with some degree of precision the conditions which are necessary in order that yellow fever may develop in an epidemic form in a given locality, not too highly situated above the sea level and where temperatures between 25 and 35 C. (77 and 95 F.) either temporarily or habitually prevail. A distinction will, however, have to be made between localities in which the yellow fever mosquito already belongs to the fauna of the place, and others in which that species of mosquito does not habitually exist. The conditions, in either case, may be reduced to three. They will be, in the first instance, as follows:

1. Presence of a yellow fever patient within the first 5 days of his attack and exposed to be bitten by mosquitoes, or else the mere importation of one or more contaminated mosquitoes.

2. Abundance of mosquitoes of the required species, so that some of them will be likely to reach a yellow fever patient in a condition to become contaminated.

3. Presence of persons liable to contract the disease and so placed that they may be bitten by the contaminated mosquitoes.

In the second instance, when mosquitoes of the particular species did not previously exist in the locality, the conditions will be:

1. Introduction of mosquitoes of the required species, previously contaminated or under such circumstances that they may become contaminated from yellow fever patients simultaneously or subsequently introduced.

2. Circumstances which may enable the contaminated mosquitoes which have been introduced to continue inoculating a series of non-immunes during a sufficient length of time to allow the insect to develop a new brood, so that the new generation of yellow fever mosquitoes may come out in time to contaminate themselves from some of the patients inoculated by their predecessors.

3. The same conditions as in number 3 above.

Whenever two of the above conditions have been fulfilled without any outbreak of the disease following, the other condition must be supposed to be wanting; and, vice versa, if an epidemic of yellow fever does develop, the third condition may be supposed to have been fulfilled even if not actually demonstrated, unless the reverse can be absolutely proved.

Instances of the first class are, for obvious reasons, by far the more frequent; they include the epidemics recorded in the southern states of the Union, in the South of Spain, in the Canary Islands, in the Balearic Islands, Western coast of Africa, Italy (Leghorn in 1804), in all of which countries mosquitoes of the yellow fever species are known to exist. As instances of the second class may be cited the epidemics recorded in the northern parts of the United States, in Saint-Nazaire (France), in England, in Canada (Quebec), Madrid (Spain), in which countries the outdoor temperatures are only suited for the active functions of the yellow fever mosquito during a limited period, and even then may not be such as would allow the reproduction of successive generations of that insect.

Inasmuch as the only natural means by which yellow fever is, so far, known to be propagated, consists in the inoculation of the pathogenic germ through the bites of contaminated mosquitoes, the propagation of the disease across the sea would, in many instances, be inconceivable unless those insects have some propensity to take up their abodes inside of vessels and to thrive in

them, even when confined within the hold during a considerable length of time. A confirmation of this fact has recently presented itself; the Mosquito Commission of the "Orleans' Parish Medical Society" having reported that five mosquitoes of the "Stegomyia fasciata" species had been found last summer in the hold of a fruit vessel just arrived in that port. Indeed, there is a possibility that such a thing did occur as far back as Columbus' first voyage of discovery. After discovering and exploring the island of Santo Domingo, he sailed from the coast of Higuey on Jan. 11, 1493, for Spain, but on February 14, his carabela having been assailed by a terrible hurricane since the 12th, he was so exercised over the thought that he might yet be unable to convey the glorious news of his discovery that, he wrote, a great fear took possession of him and every mosquito sufficed to worry and disturb him. If that expression is to be understood literally and Columbus was referring to the hours of night, the mosquitoes which worried him were probably our "pungens," otherwise they must have been our day mosquito, the regular yellow fever mosquito, those two being the only species whose domestic proclivities would have been likely to induce them to board the admiral's carabela while it lay close to the shore of Santo Domingo. The following year (1494), also, there is collateral evidence which induces me to infer that contaminated mosquitoes must have been conveyed from Santo Domingo to the Canary Islands, the homeward trip at that time being made along that route. From historical data which I had set down in my recent paper,[1] I had come to the conclusion that the first name given by the Spaniards to the epidemic which caused so many deaths among them, at Santo Domingo in 1494, had been "modorra pestilencial"; a name which I had never met before (as applied to any human disease) and only once again with reference to the severe epidemic, of the same kind, which attacked the Spaniards who went with Pedrarias Davila to Darien in 1514, until a short time after the publication of the aforesaid paper[1] when I accidentally came across the following remarkable passage in Humboldt and Bonpland's Travels[3]: "What remained of the Gaunches (in the Canary Islands) perished mostly in 1494, in consequence of the terrible pestilence called the modorra, which was attributed to the number of dead bodies left exposed to the air by the Spaniards after the battle of La Laguna." On Feb. 2, 1494, Antonio Torre had sailed from Santo Domingo for Spain, bringing Columbus' full description of his second voyage to that island and also Dr. Chanca's' interesting letter telling of the many men who had latterly been taken sick, though he felt very hopeful that their illness was not a dangerous one. It proved otherwise, however, for that was but the forerunner of a terrible epidemic to which I understand that the name of "modorra pestilencial" was given. The obvious inference is, therefore, that some of Antonio Torre's vessels had harbored mosquitoes which had bitten, in Santo Domingo, patients of modorra. The contaminated insects must have been left at the Canary Islands and there developed the epidemic among the Gaunches which is mentioned by Humboldt and Bonpland.

The following instances may be cited to show the coincidence of a remarkable abundance of mosquitoes and great mortalities among the Spaniards in Hispaniola and on the coasts of the Spanish main, within the first decades of the discovery of America.

3. Humboldt and Bonpland's Travels, London, 1814, and Philadelphia, 1815, vol. I, p. 216.

In Hispaniola, after referring to another outbreak of the usual scourge (1502-1503) on that island and to the yellow color which the patients retained for many days, Herrera[4] goes on to describe the fauna of Santo Domingo, and incidentally mentions "the mosquitoes which are there very troublesome." In 1509, on the coast of Venezuela, when Nicuesa attempted to establish his governorship of Nueva Andalucia, according to Las Casas,[5] "the men who were left at the Belen river died in large numbers and were greatly distressed by the mosquitoes." In Darien, in 1514, Pedrarias Davila's nephew having been sent to reconnoiter the Cenu river, with 200 men, these began to sicken and die, and, adds Las Casas, "being new to the country, they were devoured by the mosquitoes." Finally, on the coast of Mexico, where Vera Cruz now stands, Bernal Diaz del Castilo, notwithstanding his previous experience at Darien, complained very bitterly of the intolerable torment caused by the mosquitoes.

On the Island of Cuba, on the contrary, the abundance of mosquitoes is not particularly emphasized by the early chroniclers and it so happens that on this island the earliest outbreak of a fever which bore any resemblance to yellow fever occurred in 1620, during the summer months only and never recurred again till 1649, but this time with a more permanent character. Pezuela[6] refers to it in these terms: "In the spring of 1649, the city (Havana) was thrown into consternation by a horrible epidemic. Since the smallpox which had decimated the newly-settled towns in this island at the beginning of the sixteenth century, it had known no contagions nor illnesses, excepting those which properly belonged to its hot climate and the malignant fevers of the summer of 1620," and he adds: "In July and August (1653), Santiago de Cuba and Bayamo were afflicted with the same fevers which, three years before, had caused so many deaths in Havana." From those data, it must be inferred that the yellow fever mosquito did not originally belong to the fauna of this island, but that gradually a race of the species developed in Cuba, capable of accommodating itself to its climate which is somewhat cooler than that of Santo Domingo or of Vera Cruz; otherwise it would be difficult to account for the fact that having a sufficient non-immune population and notwithstanding that the three regular fleets (*flotas de India*) from the infected ports of Carthagena de Indias and Portobello, from Honduras and from Vera Cruz, met each year at Havana in June, before proceeding on their return trip to Spain, 100 years elapsed after the first Spanish settlements were made in Cuba before yellow fever made its appearance on this island.

In Campeche and Merida de Yucatan, on a parallel corresponding to that of the center of the Island of Cuba, the first epidemic of yellow fever, after its occupation by the Spaniards (1547) occurred in 1648, and its description by an eye witness, the Historian Cogolludo, is indeed more accurate and detailed than any that had previously been published in any language. Since then epidemics of yellow fever have at different times broken out in Yucatan, the yellow fever mosquito having apparently adapted itself to the climate of Yucatan one year sooner than to that of Havana.

Farther toward the equator, in the Guianas, where the Dutch made their first settlements in 1580, I have no information regarding the early medical history of that

4. Chronicles of Herrera, Decade 1, Book 5, Chapter 11.
5. Historia de las Indias, III, p. 330.
6. Historia de la Isla de Cuba, II, pp. 106 and 112.

country; but in 1763, an expedition of colonists having been sent by the French Government to Cayenne, most of them died of a fever which, according to Bérenger Féraud, could have been no other but the yellow fever.

South of the equator, on the coast of Brazil, the first epidemics on record are those of Bahia and Pernambuco (Recife) in 1686; but the facility with which it extended in the neighboring country shows that the yellow fever mosquito must have already existed there. Not until 1850 did yellow fever extend as far south as Rio de Janeiro; it has, however, been endemic there ever since. The present limits of the endemic yellow fever zone, so far as latitude is concerned, may therefore be placed at the 23d parallels, north and south of the equator.

In equatorial Africa, through the slave trade with the West Indies, endemic centers must have developed soon after the discovery of America; and some have persisted to this day, principally in the French colonies on the west coast, notwithstanding the racial immunity which most of the indigenous races possess.

Beyond the Atlantic shores, yellow fever epidemics have only been recorded in some ports of the Mediterranean and on the Pacific coast of South and Central America. The fact that no permanent endemic focus has ever developed on the Pacific side of the American continent, is a curious feature which must probably be attributed to the following circumstances: 1, the necessity of crossing the mountain range of the Andes in traveling from the Atlantic to the Pacific coast and; 2, the cooler temperatures which usually prevail along the western coast of South America. The first of these conditions impedes the spontaneous migration of contaminated mosquitoes across the highlands, while the cooler temperatures may prove incompatible with the development of successive broods of the particular species, on the Pacific coast, except at certain epochs, when unusually high temperatures have been known to occur during several successive years.

CONCLUSIONS.

As the outcome of the above historic and etiologic considerations I beg to submit the following conclusions:

1. The endemic foci of yellow fever in America, from the pre-Columbian times to the beginning of the seventeenth century, were comprised within a zone between the 20th and the 8th or 9th parallels of north latitude, reaching, toward the east, as far as the Leaward Islands and limited toward the west by the Atlantic coast of the American continent. During the seventeenth century, that zone extended farther north up to the 23d parallel and southward to the parallels of Bahia and Pernambuco. Finally, in 1850, it reached Rio de Janeiro.

2. The transportation of mosquitoes of the yellow fever species, in sailing vessels, appears to have been of frequent occurrence, ever since the early times of the discovery of America. To it must, probably, be attributed the coincidence of the severe epidemic of the so-called "modorra pestilencial" in Santo Domingo, in 1494, with another very fatal epidemic of the same name, in the Canary Islands, the same year. Apart from the conveyance of contaminated mosquitoes, healthy ones must have been frequently imported into subtropical countries, where they are found now to exist, having acclimated themselves to their new abodes. This is known to be the case in Italy, in the south of Spain and coasts of the Mediterranean, as well as in the South of the United States and in other countries. The previous existence of the yellow fever mosquito must be considered, *per se*, to constitute a dangerous complication whenever a case of yellow fever happens to be introduced in a place usually free from that infection.

3. The range of the Andes and its prolongation along the Isthmus of Panama and Central America, appears to have stood as a barrier, protecting to some extent the western coast of America against the migration of contaminated mosquitoes. That obstacle, however, is about to disappear when the Panama or the Nicaragua canal comes to be opened; let us hope, therefore, that, by that time, through the joint efforts of all the nations interested, all the existing foci of the disease will have been extinguished and that the adoption of measures, similar to those which have proved so successful in the hands of our sanitary department, will henceforth provide reliable means for controlling the propagation of yellow fever.

THE DIAGNOSTIC VALUE OF TUBERCULIN.

C. M. WOOD, M.D.
PHYSICIAN TO COOK COUNTY HOSPITAL FOR CONSUMPTIVES.
DUNNING, ILL.

As a general proposition it may be said that prompt accurate diagnosis is the most difficult and at the same time the most important thing in medicine or surgery.

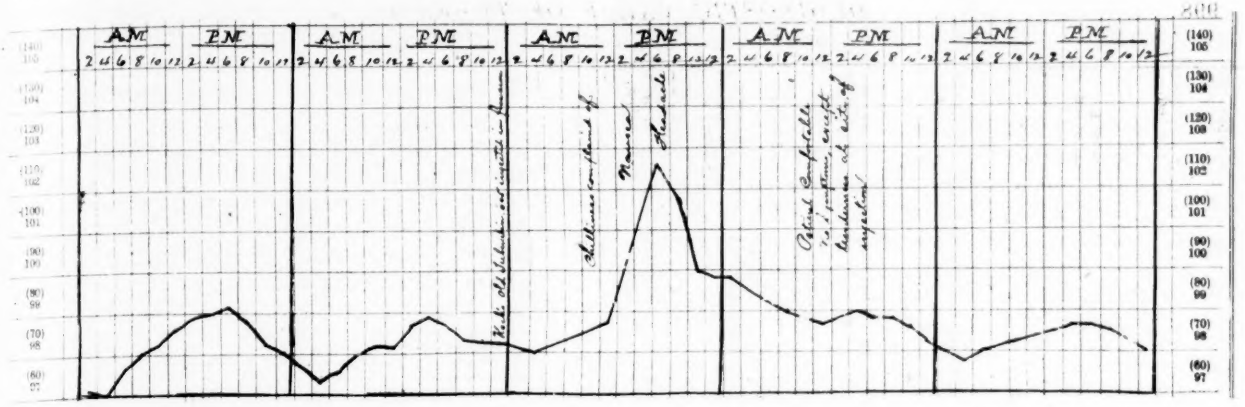
This is especially true in the matter of tuberculous diseases. Recognized early, they are very largely curable; recognized late, the prognosis is relatively and almost absolutely bad. In other words, in tuberculosis the promptness of the diagnosis very largely determines whether the given case shall result in recovery or death. If, then, early diagnosis is of such great importance; if it enables us to transform a hopeless disease into one which is in a large measure curable, it behooves us to make use of every harmless means within our power to discover the lesion and determine its nature at the earliest possible moment. The microscope, the stethoscope, the clinical thermometer and the tape measure are in the hands of every physician; their value is admitted and when properly used they will, as a rule, make possible a definite diagnosis at the time of the first examination.

However, there are cases of tuberculosis where there is no sputum nor discharge for examination; where the stethoscopic findings are inconclusive; where there is no fever nor deformity. In these cases, where all other signs fail, we have an aid so searching, so harmless and in my opinion, so helpful, that I wish to urge for it a much more general use among the profession. I refer to the hypodermic injection of tuberculin.

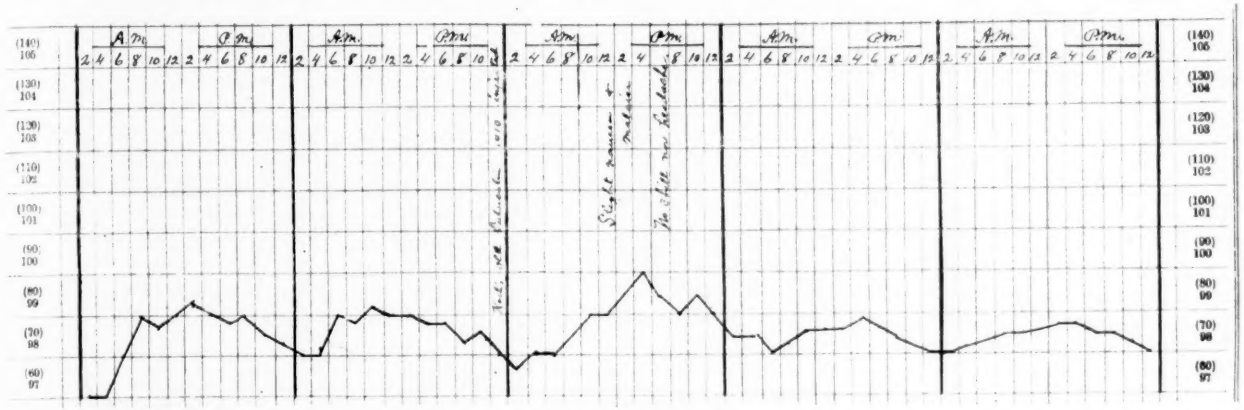
In 1890 Koch first advocated tuberculin as a remedy for tuberculosis. When it was found later that it would not cure the disease the majority of the members of the profession abandoned it and now that it has found its place as an aid to diagnosis they refuse to reconsider it.

Much has been written on the value of tuberculin as a diagnostic measure, and its use has been advocated by some of the best men in the profession. Nevertheless, it has not been employed as generally as it should be. There are several reasons for this. 1. We habitually neglect to use all the diagnostic resources at our command. 2. It was formerly thought that the administration of tuberculin, even in moderate doses, might aggravate the disease. 3. The reaction is not always clear and definite. This, however, is usually due to insufficient dosage.

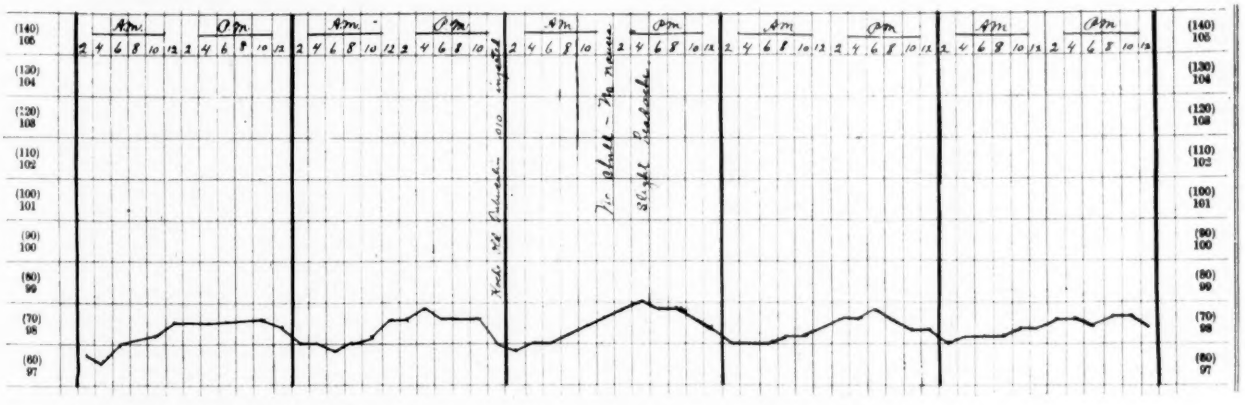
The principal objection urged against tuberculin is its supposed possibilities for doing harm. It is no doubt true that the enormous doses given in the first years of



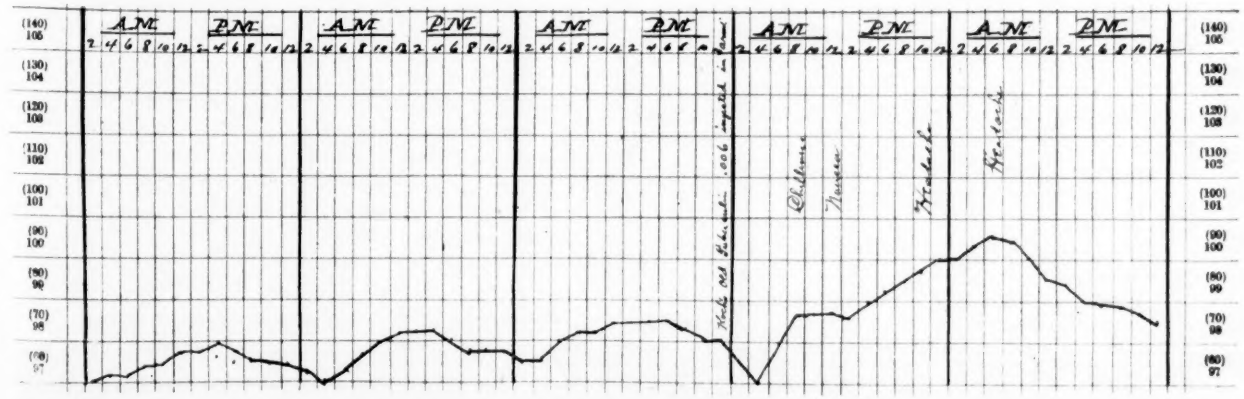
April 4, 1900.—Typical tuberculin reaction in a patient supposed to have incipient pulmonary tuberculosis—lung examination negative and no T. B.'s in sputum.
May 2, 1900.—T. B.'s found in sputum.
Dec. 1, 1901.—Chronic tuberculous broncho-pneumonia of right upper lobe and left apex.



Slight disturbance but no diagnostic reaction in case of resolving pneumonia.



Showing absence of tuberculin reaction in case of bronchiectasis with distinct cavity formation.



Delayed but distinct tuberculin reaction in the case of fibroid phthisis, showing no T. B.'s in sputum.

Case number.	Date injected.	Amount injected	Name.	Temperature rise. Degrees.	Hours from injection to height of reaction.	Chilliness.	Headache.	Nausea or vomiting.	Described reaction.	Diagnosis.	Re-examinations.
926	11, 30, '99	.010	H. A.	0					No.	Emphysema	12, 1, '01. Not tuberculous.
936	12, 7, '99	.010	A. G.	0					"	"	1, 1, '01. " "
528	6, 29, '99	.010	C. J.	0.4	8				"	Nephritis	6, 29, '99. Died. Nephritis.
572	6, 30, '00	.010	C. C. G.	0 5	6				"	Bronchitis	1, 3, '01. Recovered.
716	8, 26, '00	.010	E. S.	0					"	Endocarditis	11, 30, '00. Postmortem; not tuberculo's.
146	1, 7, '99	.005	S. B.	1	6		1	1	"	Bronchitis	4, 4, '99. Recovered
1564	12, 8, '00	.010	J. McD.	0			1		"	"	12, 1, '01. Not tuberculous.
2202	3, 14, '99	.010	J. McK.	4.2	12	1	1		Yes	Syphilis	12, 1, '01. " "
252	3, 14, '99	.008	T. D.	0.					No.	Bronchiectasis	4, 15, '99. Bronchiectasis.
619	12, 7, '99	.010	J. A.	1.	48				"	Abscess, lung	Postmortem; abscess, lung.
802	10, 24, '99	.010	C. L.	0.					"	Bronchitis	4, 15, '01. Recovered.
1185	6, 4, '99	.010	S. A.	0 6	36				"	Bronchiectasis	6, 30, '01. Not tuberculous.
1093	2, 6, '00	.010	J. M.	1	24				"	Pneumonia	3, 26, '00. Recovered.
1815	2, 26, '00	.010	A. O.	0.					"	Emphysema	12, 1, '00. Not tuberculous.
984	2, 12, '00	.010	C. N.	0.					"	Bronchiectasis	6, 25, '01. " "
978	2, 7, '00	.010	J. McD.	1.	18				"	Bronchitis	12, 10, '01. " "
497	8, 26, '99	.010	M. H.	8	30	1	1	1	Yes	Hysteria	12, 1, '01. " "
981	1, 2, '00	.008	W. A. S.	1.	12				No.	Bronchitis	12, 9, '01. " "
957	12, 16, '99	.010	H. M.	0					"	"	8, 7, '00. Recovered.
695	8, 26, '99	.010	M. R.	0					"	Bronchiectasis	12, 1, '01. Not tuberculous.
1119	2, 12, '00	.010	F. W. R.	4	18	1	1		Yes	Phthisis	3, 1, '00. T. B.'s found.
842	10, 24, '99	.010	A. B.	3 3	20		1	1	"	"	12, 1, '01. T. B.'s found in sputum.
909	6, 5, '00	.010	M. W.	4.	10	1	1	1	"	"	7, 6, '01. Died; hemoptysis.
1275	6, 14, '00	.008	T. W.	2	8	1	1		"	"	8, 6, '00. Died; phthisis.
943	12, 16, '99	.008	J. C.	2.5	16	1	1	1	"	"	7, 4, '00 " "
1238	6, 8, '00	.008	J. C.	4.	24	1	1	1	"	"	2, 17, '00. Left upper.
1244	6, 5, '00	.010	E. R.	0					No.	Subphrenic abscess	11, 27, '00. Postmortem; not tuberculo's.
1288	6, 14, '00	.008	E. W. H.	1.	24				"	Pneumonia	7, 14, '00. Recovered.
110	1, 7, '99	.005	M. B.	0.					"	Bronchitis	4, 24, '99. "
1280	6, 9, '00	.010	J. B.	1.	30				"	"	11, 15, '01. Not tuberculous.
1422	9, 17, '00	.010	A. D.	0 5	12				"	Neuritis	10, 20, '00. Recovered
1454	10, 8, '00	.010	E. B.	5 2	18	1	1	1	Yes	Dementia	12, 1, '01. Not tuberculous
1223	6, 8, '00	.008	J. B.	0 8	20				No.	Syphilis	6, 12, '00. Secondary eruption.
1143	4, 1, '00	.010	T. R.	0					"	Pneumonia	5, 15, '00. Recovered.
854	10, 24, '99	.010	A. O.	0					"	Dementia	5, 15, '00. Not tuberculous.
602	10, 26, '99	.008	T. M.	2	6				"	Syphilitic joint	7, 5, '01. Recovered under iodids.
1042	2, 28, '00	.010	J. L.	1.	18		1	1	"	Bronchitis	3, 1, '01. Not tuberculous.
939	4, 1, '99	.007	A. H.	1	20		1		"	"	5, 8, '00. Recovered.
1600	12, 29, '00	.010	J. A.	0.					"	"	4, 29, '01. "
1414	9, 15, '00	.007	A. M.	0.		?			No.	Dissolution	9, 19, '00. Postmortem; phthisis.
1403	9, 17, '00	.010	J. P.	0.					No.	Neoplasm	Postmort.: sarcoma of liver
1704	3, 13, '01	.010	J. J.	2	36	1	1		Yes	Phthisis	12, 1, '01. Fibroid; left, upper.
1572	12, 29, '00	.010	D. L. M.	1.4	24				No.	Bronchitis	3, 27, '01. Recovered
867	2, 25, '00	.008	C. L.	4.5	18	1	1	1	Yes	Phthisis	12, 2, '01. T. B.'s in sputum.
431	2, 25, '00	.010	J. D.	1 4	24				No.	Cirrhosis of liver	8, 9, '00. Postmortem; not tuberculo'
1294	7, 13, '00	.008	M. W.	3.	8	1	1	1	Yes	Phthisis	8, 21, '00. Died; phthisis.
1450	9, 26, '00	.010	E. D.	2 5	16	1	1	1	"	"	3, 26, '01. T. B.'s in sputum.
1435	9, 18, '00	.010	W. G.	2.	16	1	1	1	"	"	T. B.'s found.
1298	10, 16, '00	.010	L. W. H.	3.	22	1	1	1	"	"	10, 27, '00. " "
1385	11, 27, '00	.008	J. N.	3.	16	1	1	1	"	"	2, 17, '01. Died; phthisis.
96	1, 7, '99	.010	T. C.	0					No.	Bronchiectasis	2, 12, '01. Not tuberculous.
1356	12, 31, '98	.008	S. D.	5.	10	1	1	1	Yes	Phthisis	9, 30, '00. Died. phthisis.
456	12, 31, '98	.008	W. D.	6	10	1	1	1	"	"	4, 15, '00. " "
29	1, 7, '99	.010	L. F. D.	0.					No.	Bronchiectasis	12, 1, '01. Not tuberculous.
13	12, 31, '98	.008	G. E.	6.	8	1	1	1	Yes	Phthisis	T. B.'s found.
5	12, 31, '98	.008	O. E.	5.	10	1	1	1	"	"	" "
91	12, 31, '98	.010	W. M.	0					No.	Mitral regurgitation	12, 3, '99. Mitral regurgitation.
1288	6, 18, '00	.010	W. H.	4.	24	1	1		Yes	Syphilis	9, 15, '00. Recovered on iodids.
114	3, 14, '99	.008	F. F.	0 5	8		1	1	No.	Bronchitis	12, 1, '01. Not tuberculous.
151	3, 12, '99	.008	O. K.	0					"	Empyema	Rib resection: recovery.
1055	3, 14, '99	.010	G. F.	0 5	12				"	Bronchitis	3, 14, '00. Not tuberculous.
349	4, 30, '99	.010	J. Mc.	3 5	18		1	1	Yes	Phthisis	10, 1, '01. T. B.'s found in sputum.
712	12, 7, '99	.010	C. P.	2 5	18		1	1	"	"	Died; phthisis.
949	12, 7, '99	.010	T. D.	4.	20	1	1	1	"	"	5, 1, '00. T. B.'s in sputum.
261	10, 11, '99	.010	W. F.	5.	18	1		1	"	"	3, 18, '00. Died; phthisis.
762	1, 6, '99	.005	S. N.	3	16		1	1	"	"	8, 23, '99. " "
911	12, 4, '99	.010	H. W.	4.	16	1	1	1	"	"	1, 18, '00. Right upper lobe.
930	11, 30, '99	.010	P. K.	4.	18	1	1	1	"	"	4, 10, '00 " " "
488	6, 26, '99	.010	M. M.	5.	14	1	1	1	"	"	2, 13, '99. Extensive phthisis.
878	11, 13, '99	.010	J. O'M.	4.	18	1	1		Yes	Syphilis	2, 13, '00. Not tuberculous.
417	4, 1, '99	.010	M. C.	2.	16		1	1	Yes	Phthisis	1, 1, '00. Evident phthisis.
338	4, 1, '99	.005	M. P.	2.	16		1	1	"	"	8, 8, '99. Died; phthisis.
1600	11, 11, '99	.010	J. A.	0 5	4				No.	Bronchitis	4, 29, '01. Not tuberculous.
831	10, 26, '99	.008	D. O'N.	0.					"	Acute pleurisy	5, 2, '00. Recovered.
924	11, 30, '00	.010	J. S.	1 2	16		1		"	Bronchitis	7, 5, '01. Not tuberculous.
1629	12, 5, '00	.010	W. G.	5.	15	1		1	Yes	Phthisis	5, 6, '01. T. B.'s found.
1545	12, 18, '01	.010	W. G.	0.			1	1	No.	Bronchitis	3, 11, '01. Recovered.
1742	2, 21, '01	.010	J. K.	5.	12	1	1		Yes	Pleurisy	5, 17, '01. Tubercular empyema.
1749	4, 12, '01	.010	T. W.	2.	18	1		1	"	Phthisis	5, 1, '01. T. B.'s found.
	11, 25, '01	.005	M. D.	2.6	24	1	1		"	Tubercular	Tubercular knee and ankle.
1668	2, 21, '01	.008	J. M. I.	6.	10	1	1	1	"	Phthisis	3, 13, '01. T. B.'s found.
1700	2, 22, '01	.010	A. B.	5.	16	1	1	1	"	No signs	2, 28, '01. Left apex.
1446	9, 28, '00	.010	A. F.	1.6	28		1	1	No.	Typhoid	11, 1, '00. Recovered
1439	9, 20, '00	.010	J. C.	0.					"	Hospitalism	12, 1, '01. Not tuberculous.
1542	11, 27, '00	.008	M. F.	0					"	Enteritis	12, 28, '00. Recovered.
1537	12, 5, '00	.010	W. B.	0					"	Emphysema	12, 5, '01. Not tuberculous
1569	10, 8, '00	.010	J. R.	1 6	21		1		"	Bronchitis	12, 8, '01. " "
1688	2, 22, '01	.008	E. K.	0.					"	Pneumonia	3, 22, '01. Recovered.
1702	2, 22, '01	.010	C. F.	1.	16				"	"	3, 15, '01. "
1708	2, 22, '01	.010	J. A.	0.					"	Acute bronchitis	3, 1, '01. "
1641	1, 26, '01	.008	J. B.	3	20		1	1	Yes	Phthisis	2, 26, '01. Right upper lobe.
1721	3, 15, '01	.006	R. M.	1 8	24		1		No.	Bronchiectasis	12, 1, '01. Not tuberculous.
	6, 1, '99	.010	I. T.	0.					"	Fistula	12, 1, '01. " "
1611	1, 23, '01	.010	J. S.	0.					"	Bronchitis	5, 5, 01. Recovered.
1729	3, 13, '01	.008	J. W.	1	24				"	Acute adenitis	4. 15, '01. "
1785	4, 12, '01	.010	D. W.	1 6	16				"	Abscess	6, 1, '01. Postmortem; lung abscess.
1445	9, 26, '00	.010	J. P.	0.5	4				"	Pneumonia	10, 27, '00. Recovered.
844	11, 11, '99	.010	J. S.	1 4	20				"	Tumor	Postmortem; mediastinal tumor.
60	3, 15, '99	.010	C. B.	1 2	28	1	1		"	Bronchitis	12, 1, '01. Not tuberculous.
2164	12, 2, '01	.008	P. K.	2 2	10	1		1	Yes	Phthisis	12, 10, '01. T. B.'s in sputum.

Number of cases injected, 100; number of false reactions, 6; percentage of error, 6 per cent.

its use as a remedy sometimes did injury. Mention is made by Muir and Ritchie of the injection of 25 c.c., which is 1600 times the dose necessary for the diagnostic reaction. With such huge doses it is quite possible harm may have resulted.

In approximately 250 cases, some of these receiving as much as .015, I have watched carefully for any unfavorable effect in the course of the disease. In not a single instance did the diagnostic dose either accelerate an active process or light up a quiescent one.

Also in cases complicated with nephritis, cirrhosis of the liver, endocarditis, typhoid fever and pneumonia no harmful effect could be detected. In tubercular meningitis however (and this is the only exception), it is quite probable that the local reaction might do serious damage by increasing the intracranial pressure.

Objections to tuberculin on the grounds of unreliability can not however be answered so readily. Tuberculin is like the stethoscope—it gives the evidence but the verdict must be decided by the diagnostician.

Appended to this paper is a table of 100 cases in which tuberculin has been given for diagnostic purposes. All cases have been under observation for a year or more after the injection or else the case has earlier taken such a course that the findings based on the tuberculin injection could be either confirmed or disproven. From a study of this list of cases I have formulated for my own use the following requirements for the diagnostic reaction:

1. The rise in temperature must amount to at least 2 degrees.

2. It must reach its height between 6 and 24 hours after the injection, except in fibroid cases, where it may be delayed to 36 hours.

3. It must be accompanied by at least two of the following symptoms: chilliness, headache, nausea, and muscular pains.

When the list is examined it is found that 41 cases gave a reaction meeting these requirements. Of the 41 cases 36 were subsequently proven to be undoubted cases of tuberculosis; 3 were syphilitic, and 2 were profoundly neurotic.

In something less than 50 per cent. of cases syphilis gives a reaction which can hardly be distinguished from that of tuberculosis. However, this seems to be the case only when syphilis is still active enough to give manifest signs—one case by Dr. Otis, of Boston, to the contrary notwithstanding. Consequently, in any case showing a reaction, active syphilis should be excluded before it is decided that the case is tuberculous.

In the neurotic cases the symptoms were wildly exaggerated, in one case the temperature reaching 108. The other case reacted later with almost equal intensity to a hypodermic injection of sterile distilled water. In these cases the reaction had no diagnostic dignity.

It is said that a reaction sometimes follows the injection of tuberculin in cases of leprosy, actinomycosis and a few other diseases, but these occur so infrequently in this country that they seldom enter into the problem.

Of the 100 cases 59 failed to show a reaction that would meet the above mentioned requirements; of these only one subsequently showed evidence of tuberculosis, although all were under observation for from one to three years.

In this single case the injection was made only four days prior to death at a time when the bodily powers were unable to react to any irritant.

This list is short; the number is small, but since every case was followed until it made manifest its tuberculous or non-tuberculous nature it gives us some idea of the reliability of tuberculin and the essential symptoms of the true diagnostic reaction.

Unless the process is undergoing fibrosis the reaction must reach its height in the first 24 hours after injection, most typically at the 18th hour.

CHART I.

Slight rise of temperature is inconclusive; 33 of the 58 non-tuberculous cases showed some elevation following the injection, but only in the 3 syphilitics and 2 neurotics did the rise amount to 2 degrees.

CHART II.

The rise in temperature in tuberculous cases depends somewhat on the amount of tuberculin injected. The initial dose should be .005 (M. viii of a 1 per cent. solution). If there is no reaction whatever it is probable that tuberculosis is not present. If no symptoms have been produced by this small dose, it is more satisfactory and perfectly safe to repeat the injection, using .010. If with this dose the characteristic reaction does not occur it may be decided with much certainty that the case is not tuberculous.

CHART III.

If, however, .005 produces some disturbance, yet less than the characteristic reaction, the dose should be increased by .0025 each third day until .010 is reached or the characteristic reaction produced.

These doses, while somewhat larger than usually recommended, are absolutely safe and will not influence unfavorably the course of the disease. On the other hand the result will be more definite and therefore more valuable than if small doses only are used.

The amounts given above are for Koch's original tuberculin made in Germany; with the Pasteur Vaccine Co.'s tuberculin I have had to use slightly larger doses to obtain the same definite results. Veterinary tuberculin I have not found reliable for human use.

The technic of the injection is as simple as the administration of a hypodermic of morphin or strychnin. A one, two or three per cent. solution may be used, or a solution of the following formula: Koch's old tuberculin made in Germany, m. i, distilled water recently boiled, ʒi, 5 per cent. carbolic solution, m. v of this solution m.i = .001 of tuberculin. Before the injection the temperature is to be taken every four hours for at least two days and the temperature during the reaction is to be compared, not with the normal but with the temperature at the corresponding hours on the days preceding the injection. Patient's mode of life, his diet and exercise must not be changed during the days of the test in any way that might influence the temperature.

Tuberculin has its peculiar value in the fact that it is the complement of the microscopic examination. A positive sputum examination establishes a diagnosis of tuberculosis; a negative tuberculin examination, provided a dose of .010 is used, practically excludes tuberculosis.

It can not be denied that patients are more or less uncomfortable for a few hours during the height of the reaction. Headache is the symptom most complained of and it should be relieved by a moderate dose of the bromids, as the coal-tar products interfere with the temperature curve. Chilliness, nausea, muscular pains and sweating occur in various combinations. Seldom are they all present and no symptom except the headache is ever severe. The day after the reaction the patient feels quite as well as usual.

A very circumscribed induration and redness of the skin, very closely resembling erysipelas, will usually surround the site of injection for a few days. This occurs in tuberculous and non-tuberculous cases alike. Abscess formation can always be avoided except in syphilitic subjects, where it is very prone to occur.

The so-called "local reaction" at the site of the tuberculous lesion may be very slight; in fact, even where the general reaction is distinct the local reaction often can not be detected either in affected lungs or joints. In lupus the local reaction is usually distinct.

That tuberculin might sometimes be used to advantage in recognizing advanced, as well as early cases, of pulmonary tuberculosis, is shown by the fact that of the 2240 cases sent to the Cook County Hospital for Consumptives 239, or over 10 per cent., were not tuberculous; 263 showed no tubercle bacilli in the sputum. Of these 24 were proven by the aid of tuberculin to be cases of tuberculosis.

Also in excluding the 239 non-tuberculous cases tuberculin was often of service; for with the microscope and the stethoscope alone it is manifestly much easier to confirm than to disprove a diagnosis of phthisis.

CONCLUSIONS.

Tuberculin in doses of .005 carefully increased, when necessary, to .010, produced no bad effects in simple or complicated tuberculous or non-tuberculous cases.

The characteristic tuberculin reaction is shown by a rise of at least 2 degrees in temperature, reaching its height in from 6 to 36 hours after the injection, typically at the 18th hour, and accompanied by at least two of the following symptoms: chilliness, headache, nausea and muscular pains.

The tuberculin test ranks in value with the Widal typhoid test since in the former the technic is simpler; the materials are more readily obtainable and more permanent; the danger is no greater and the information obtained is scarcely less reliable.

THE PARAFFIN INJECTION TREATMENT OF GERSUNY, WITH A REPORT OF CASES.

RUPERT M. PARKER, M.D.
CHICAGO.

About two years ago a young man, who had undergone a double castration, presented himself to Gersuny[1] with the complaint that, being obliged to go before the military medical board of Austria for examination, it would be humiliating to display his defect.

Gersuny, having incidentally observed, in connection with certain therapeutic measures, that paraffin of a low melting point, when injected into the tissues of the body, remained indefinitely without reaction, conceived the idea of substituting paraffin prothesis for the absent members. He injected various quantities of paraffin at different times, and accomplished the desired result, which he reported shortly afterwards, together with the details of his technique.

The success of his first trial encouraged Gersuny to make other applications of his treatment. The second patient,[2] a woman, suffered from absolute incontinence of the urine, which had resisted repeated operations for its relief. The urethra was widely dilated and its mucous membrane was prolapsed. Paraffin was injected under the prolapsed mucous membrane and the latter pushed into the bladder so that the deposits of the wax came to rest within the internal meatus. Then a ring of paraffin was injected beneath the skin around the external meatus, to prevent a recurrence of the prolapse. After injections of various quantities of paraffin at different times, Gersuny finally succeeded in producing complete continence, and at the last report from the patient, one year after the final treatment, urine could be retained from eight to ten hours at a time.

Since the publication of these two cases, other surgeons, as well as Gersuny, have employed the treatment in various pathological conditions. In a case of urinary incontinence in a female, Kapsammer[3] injected the paraffin below the urethra, which was thus crowded upward and arched over the prothesis, a condition resembling that of the hypertrophied prostate in the male. Pfannenstiel[4] reported an unsuccessful attempt in treating a case of bladder insufficiency almost identical with that of Gersuny. He used the same method but deviated somewhat from the original technique and observed the typical symptoms of a lung embolus as a complication, which will be considered later. Halban[5] and Moszkowicz[6] have reported cases of cystocele, prolapse of the vagina and prolapsus uteri with retroversion successfully treated by the injection of paraffin into the vaginal walls and the parametrium. It is self-evident that such an application is permissible only when future pregnancy can with all probability be excluded and when the radical operation must be avoided.

Gratifying results were obtained from the injections for the relief of incontinence of the feces[6] following an amputation of the rectum for carcinoma and after operations for peri-rectal abscess and fistula in ano.[6] Complete continence was secured in the two latter cases, and continence, except for fluid stools, in the former. Three months after the final treatments the good results were still present. Hard feces were passed with difficulty, making it necessary to use enemata and avoid constipation. Paraffin injections have been used to some extent in the treatment of inguinal hernia. Moszkowicz[6] reported two cases of large scrotal hernia which had repeatedly become incarcerated in spite of attempts at mechanical support. The inguinal canal was narrowed from a diameter admitting four fingers to that admitting one, by injections of paraffin into the surrounding tissue. The contents of the sac could then be satisfactorily retained by means of a truss. Seven months after the treatment of one case and ten months in the other the improved conditions were unaltered. Experience has taught in these cases, however, that the paraffin in the loose tissue about the inguinal canal is liable to become displaced and sink into the scrotum unless sufficient time is allowed for its encapsulation before the truss is applied. Gersuny does not consider his method a substitute for the radical operation in the treatment of hernia, but an alternative when the latter is contraindicated.

Among numerous other applications the injection of paraffin about the ends of a resected nerve[6] has been found useful in preventing their reunion. The introduction of paraffin between the surfaces of a joint after the breaking of an old ankylosis has been suggested to prevent a recurrence of the adhesion. A substance like paraffin which can be easily removed after the joint surfaces have healed is much more suitable than the firmer materials, such as celluloid, silver, tin and rubber, employed by Cklumsky. However, the practical application of paraffin to this purpose has not been sufficient to establish its utility.

Gersuny has found a limited use of his treatment in oral surgery. A small opening between the nose and the

mouth, left after a staphylorrhapy,[6] was closed by injections of paraffin. In another case following staphylorraphy,[6] the velum was too short to be approximated to the posterior pharyngeal wall, so that hard "g" could not be pronounced. Injections under the mucous membrane of the posterior pharyngeal wall and of the uvula caused the former to bulge forward and the latter to elongate sufficiently to overcome the defect.

Most satisfactory and startling results of the treatment are seen in the correction of unsightly deformities following cicatricial contractions resulting from wounds and loss of tissue through disease and operative measures. The resection of the superior maxilla in one patient and of several ribs in another[6] was responsible for two disfigurements corrected by Gersuny. In the latter case the depression was so great that an injection of over two ounces of paraffin was required to fill out the chest to symmetrical proportions. This is the largest amount of paraffin ever injected into the human body. As most suitable for the purpose of filling out smallpox pits and other cicatricial retractions, Gersuny[6] recommends a mixture of four parts of olive oil to one of paraffin. To

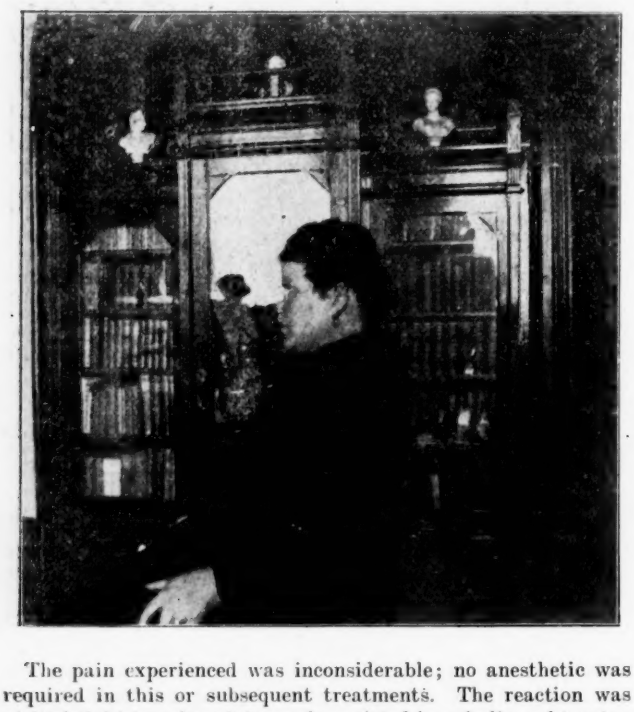
overcome the defect it is usually necessary to make the depressed area bulge. The oil is absorbed and the surface becomes even. Where the scars are firmly bound to the underlying tissue by adhesions, it is necessary to separate them by means of the bistoury. Moszkowicz[6] and Rohmer[7] have reported the injection of paraffin into the retro-orbital tissue, thereby supplying a deficient support for an artificial eye. In the correction of the saddle nose which has resulted from either trauma or osteomyelitis highly satisfactory results are reported by Moszkowicz.[6] Stein[8] and Heath.[9] The writer also has employed the treatment in the correction of two cases of saddle nose, a report of which follows with a description of the technique used.

The paraffin should have a melting-point slightly above the normal temperature of the body, i. e., between 99 and 104. If it is below the body temperature it will soon be carried away by the lymphatics and if the paraffin is too hard it may cause necrosis, as in the case treated by Foederel. There is no paraffin on the market with the proper melting-point, so far as I can learn. The ordinary lump paraffin is much too hard and the paraffin known as white or medicinal vaseline is too soft. These two products may be melted together in proportions to secure the desired consistency, or the liquid vaseline and the lump paraffin may be mixed. The ordinary soft paraffin in lumps and oleum petrolati were used in the treatment of my cases. The melting-point of the mixture was tested with the clinical thermometer. The bulb was smeared with a thin coating of the wax and immersed in a water bath, which was gradually heated until the melting-point was reached, when the wax loosened itself and floated to the surface as a globule of oil, and the thermometer indicated the temperature. My finished product had a melting-point of about 102 F., and its consistency was that of vaseline. It was sterilized, as Gersuny[1] recommended, by heating it at its boiling-point for a few moments. This process is reasonably certain to kill all pathogenic germs, as the boiling-point of the paraffin is much above that of water.

For the purpose of injection an ordinary hypodermic syringe with a large needle might have been used, but as the paraffin hardens and destroys the leather valves and loosens the cement in the joints around the glass barrels, a syringe constructed entirely of steel was found more serviceable. The syringe was aspirated full of the melted paraffin, inverted, and the piston pressed upward sufficiently to expel any bubble of air present in the cylinder. The needle was then screwed firmly on its attachment and, to prevent its contents from hardening too rapidly, the instrument was placed in hot water until needed. Just before inserting the needle for injection, the syringe and its contents were tested by strong, steady pressure on the piston. If the needle had become clogged, the obstruction was removed by a strand of fine wire. The paraffin was allowed to cool sufficiently to flow from the needle, not as a liquid, but as a worm-like, semi-solid, coherent string. The patient, as a rule, required no preparation beyond the usual antiseptic precautions. When the tissue to be injected was very dense and inelastic, the injection of paraffin was preceded by one of Schleich's solution, which served to anesthetize the region and at the same time dilate the lymph spaces in anticipation of the paraffin. The needle was always

introduced at some distance from the seat selected for the prothesis and then carried under the skin to the desired point. If the needle were inserted through the skin directly over the prothesis, more or less paraffin would escape through the tract of the needle after its withdrawal. The paraffin was distributed as desired by changing the position of the needle-point while an assistant molded the prothesis with the fingers as it was deposited in the tissue. The skill required in the injection and distribution of the paraffin was previously acquired by a few experiments on animals.

CASE 1.—This was a patient of Dr. E. B. Fowler, to whose courtesy I am indebted for the opportunity of presenting this case. Wm. T., aged 25, received a traumatic injury of the bridge of the nose eleven years ago. The deformity which resulted is shown in photograph No. 1, taken immediately before the first injection. On Dec. 6, 1901, 2.5 c.c. of paraffin were injected by Dr. Fowler and the writer. The point of the needle was inserted under the skin on the dorsum of the nose, slightly below the level of the eyebrows, and pushed as far downward as it was desired to begin the prothesis. The result of the first injection is shown in photograph No. 2, taken immediately afterwards.



The pain experienced was inconsiderable; no anesthetic was required in this or subsequent treatments. The reaction was at its height two days later and consisted in a feeling of tension in the skin of the nose, slight frontal headache, some erythema and a moderate amount of edema of the nose, spreading somewhat upon the face. December 15 the reaction had so far subsided that a second injection was permitted. With the needle inserted at the tip of the nose, .5 c.c. was injected. The reaction was less than by the first treatment.

The patient presented himself again on Jan. 5, 1902. Although the curve of the bridge was uniform, he was not yet satisfied, as the nose was very broad at the base, and out of proportion to its height. Another injection of .5 c.c. was given. The prothesis has gradually increased in hardness until now it has the consistency of a cartilage.

CASE 2.—Mrs. C. presented a deformity of the nose, shown in photograph No. 4, as the result of an ulceration nine years ago, which destroyed the whole cartilaginous septum and the cartilages of the alæ. An injection of 1 c.c. of paraffin on December 8 corrected the saddling completely, but the collapsed condition of the alæ remained unimproved after repeated injections, owing to their lack of support. The reaction following the injections in this case was very slight. Infiltration of Schleich's solution preceded the paraffin injections into the alæ, on account of their dense, inelastic tissue. The results of the treatment in both cases were most gratifying to the patients and their friends.

Several objections have been raised to the injection treatment of Gersuny. Meyer[10] holds that the paraffin is more or less toxic and his contention is corroborated to an extent by the experimental work of Straume,[11] Dunbar,[12] Stubenrath[13] and Sobieranski.[14]

On the other hand, Stein[8] injected liquid vaseline under the integument on the backs of white mice, in quantities equal to one-third their body weights. No rise of temperature or other constitutional disturbance followed. Only one mouse died and that from mechanical injuries. Whether the constitutional disturbances observed by the other investigators, above mentioned, resulted from mechanical injuries in the administration of large quantities of the coal-tar oils, or whether the injury was of a toxic nature, matters little so far as the Gersuny treatment is concerned. The amount of paraffin is relatively so small and its absorption, if it occurs

at all, is so slow that toxemia from the paraffin injected for surgical purposes is not to be feared.

Meyers[10] also objects that the paraffin used by Gersuny will be eliminated from the body by absorption. To prove this he carried out a series of experiments on animals, but admits that his results were not conclusive. Juckuff[15] found that non-watery fluids like liquid vaseline, when injected into the bodies of animals, are not directly taken up by the lymph vessels, but undergo a fine subdivision by the ingrowth of connective tissue and are finally converted into emulsions, the small globules of which are held in the meshes of the connective tissue and finally carried away by the lymphatics. In the margins of an old paraffin prothesis the same histological process was seen by Gersuny. No case has been observed long enough to decide whether the paraffin finally undergoes absorption or not. In Gersuny's oldest case[6] no diminution in the size of the prothesis could be detected after two years. From this we know that if elimination of the paraffin does occur it is a very slow process. The objection from Werthmuth, that

paraffin injected into the pelvic tissue may become displaced by coitus and obstruct the ureters by pressure, is more theoretical than practical. At least no such accident could occur after the prothesis has had two or three weeks' time to become fixed by encapsulation.

Another and a more credible objection to the treatment is the danger of lung embolism if the paraffin is injected directly into a vein. In Pfannenstiel's complication of lung embolus following the injection of 30 c.c. of paraffin, the case ran a mild course with recovery. Friends of the treatment blame Pfannenstiel's technique for the accident, inasmuch as he used paraffin with a melting-point of 113. They claim that in order to inject 30 c.c. of such paraffin at one injection, a much higher temperature would be required to prevent hardening before the process could be completed, and that the degree of heat may have caused coagulation in a vein, hence the embolus. The experience of the dermatologists with the injections of mercury suspended in liquid paraffin and other allied oils is instructive as to the dangers of embolus in the paraffin injections. Harttung[16] saw only one case in 8000 intermuscular injections, and Möller observed 28 in 3835 cases. He then changed from inter-muscular to subcutaneous injections, and found no embolus in 240 injections. Neisser[18] had one among 800, and Epstein only 7 among 8292 subcutaneous injections. The majority of the cases of emboli following intermuscular and subcutaneous injections of oils are very mild, with transitory symptoms and I know of no fatal case ever reported. When a semi-solid paraffin is injected, it is reasonable to expect fewer emboli than have occurred with injections of oil.

From the results of the paraffin injection method of Gersuny already obtained, I think it justifiable to claim for the measure a permanent place in the treatment of appropriate cases. Even though future experience proves a slight danger from lung embolism, the treatment will find application in cases which can not be relieved in any other way, and in those in which other measures are far more dangerous or absolutely contra-indicated. It may be that the paraffin is slowly absorbed, but many patients will gladly submit, at long intervals, to so mild a measure for the relief of defects which are social stigmata, when they would shrink from the dangers of a more severe operation.

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A NEW COUPLER FOR RAPID INTESTINAL ANASTOMOSIS.*

EVAN O'NEILL KANE, M.D.

KANE, PA.

The variety of mechanical devices and stitches recommended for intestinal anastomosis is so great as to sufficiently prove all to be inadequate. The loss of one of my patients in whom I placed a Murphy button, on account of a plum skin occluding its small aperture like a valve, brought forcibly to my notice the danger in its employment. The loss of two others, however, in which I subjected them to the shock incident to prolonged exposure of the intestines during suturage with mauling and bruising and needle puncturing common in such cases, made me still unwilling to lay aside Murphy's contrivance.

I began a series of experiments seeking to elaborate some device which would possess the advantages of the Murphy or the Frank button but with an aperture of ample dimensions and admitting of a larger and wider intestinal overlap. I determined, also, to do away with stitching of any kind and to make leakage impossible. After much work and experimentation I believe I have succeeded in producing a coupler that answers every purpose, at least until something better can be devised.

I have as yet employed this latest modification of my coupler upon but one human subject, a boy who unfortunately died three days after operation from a general septic peritonitis (result of a neglected typhlitic abscess and requiring a resection of gut for gangrene), too soon therefore to allow of the complete detachment of the coupler. In this case, however, a firm union by lymph exudate had taken place around the entire circumference while a rarifying necrosis had already commenced in the portion compressed between the flanges. Among the living animals upon which I experimented were two dogs and three cats, all of which made perfect recoveries. They passed their couplers at periods varying from three to five days after the insertion, with the exception of one cat, which disposed of its coupler when out on a ramble, the precise date not being known.

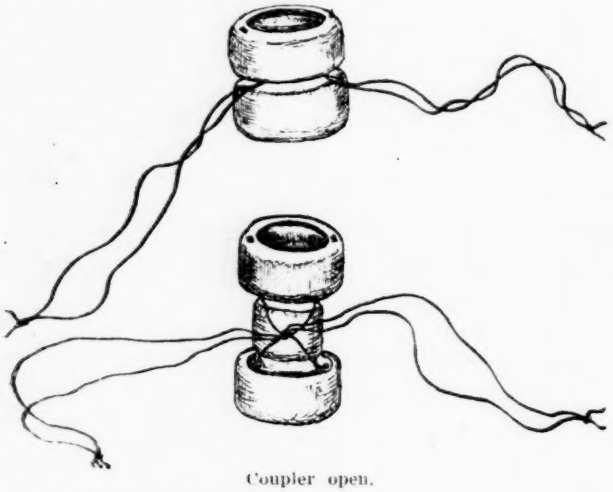
The principles essential to assure success are as follows: 1. Rapidity of execution. 2. A patulous canal with a caliber sufficient to make occlusion impossible. 3. No possibility of leakage. 4. Apposition of serous surfaces around the entire lumen. 5. A sufficient overlap to insure obtaining sound live gut within and about the field of union with active circulation. 6. The least amount of handling during the necessary manipulation. 7. The least number of needle punctures and suturage. 8. Simplicity of construction and application such as will render its employment intelligible and applicable by any novice. 9. It should not be large enough to make it a source of obstruction after it becomes detached.

My coupler consists of three cylinders, two outer and one inner one. The latter has a length equal to that of both the former, which are large enough to slip easily over it, besides allowing a layer of gut to be interposed. The inner cylinder has a depression around each end and a projecting flange. The distal margins of the outer cylinders are incurved to the same caliber as that of the inner one. The proximal margins are also inverted but only to a sufficient degree to enable them to catch upon the flange of the inner cylinder when they are drawn apart. By means of two perforations opposite each other in the incurved distal surfaces of each of the outer

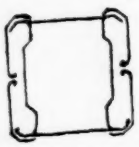
* Read and demonstrated before the McKean County Medical Society, Dec. 12, 1901.

cylinders and others in the flanges at each end of the inner one, extra strong braided linen threads with knots at the ends to prevent their slipping completely through, are passed, brought together across the middle of the inner cylinder and twisted loosely into a half tie. The method of application is as follows: A severed end of gut, the mesenteric attachment of which has been cut or pushed back one or two lines, is seized firmly at four equidistant points by hemostats and drawn over one of the outer cylinders, the coupler having been previously pulled as widely apart as the flanges will permit. Leaving an assistant to hold the intestine drawn thus over the outer cylinder the operator passes a strong silk ligature around the gut immediately behind the beaks of the hemostats and after making two half turns pulls tightly upon it until the encircled gut is firmly buried in the groove around the end of the inner cylinder. A second tie is now made to prevent the thread loosening and with a scissors the ends of the thread are cut short. At the same time the scissors cut off any redundant portions of gut held in the jaws of the hemostats, which are now removed. A similar procedure is next carried out with the other severed portion of gut upon the opposite outer cylinder. Thorough lavage

Coupler drawn together.



Coupler open.

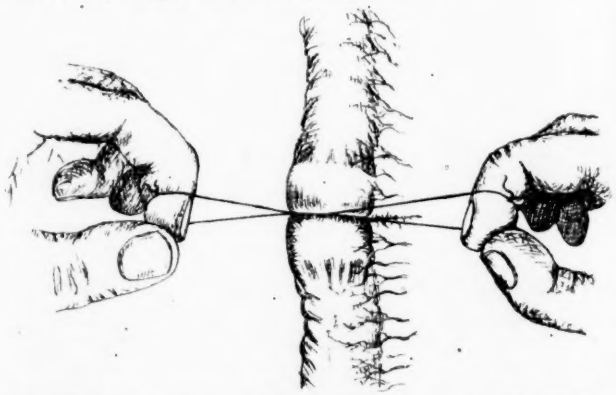


Longitudinal section of coupler.

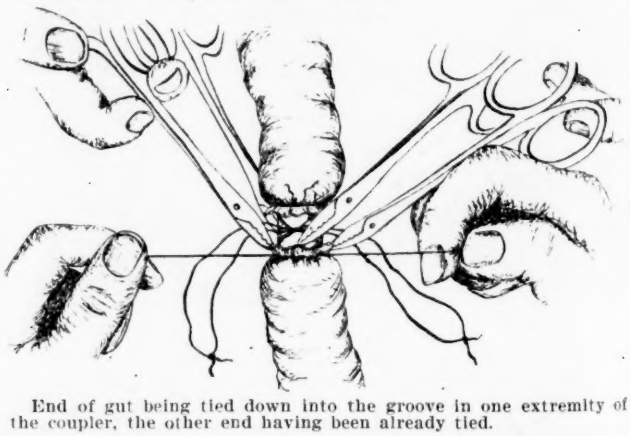
with sterile salt solution is here resorted to before folding under shall take place. Then the operator, passing the index finger of each hand through one of the loops of the approximating ligature of the coupler, pulls firmly upon them with a slightly zigzag motion until the outer cylinders are drawn so snugly together as to bring the intervening margins of the inverted serous intestinal surfaces into an even and accurate apposition around their entire circumference.

In completion a reverse half turn is made in the approximating ligatures, the knot drawn tightly, and the ends cut off short. It will be observed that the knot is hidden deeply between the serous intestinal surfaces and approximated cylinders so that by lightly pressing back the protruding ends of ligature with a scissor blade or other dull-edged instrument, there is no thread left visible at any point.

As with Murphy's and similar devices so with my coupler, the approximated serous surfaces of gut rapidly adhere by lymph exudate, but my coupler does not permit any possible leakage (owing to the ends of gut having been first tied firmly down within the grooves at the extremities of the inner cylinder). It therefore requires no suturing of serous surfaces and produces a more perfect and smooth union. It becomes detached and is passed like other contrivances, but unlike them one need feel no anxiety regarding that occurrence because of its relatively small diameter in proportion to its central opening. While it remains adherent there is less danger of stoppage as the opening is much wider than that in any other mechanical device. My objections to a coupler of decalcified bone are that it is hard to make and can be used only once; it is expensive and it swells after its introduction. I see no necessity for an absorbable contrivance when a metal one is so unlikely to become lodged after detachment.



Drawing the coupler together by pulling upon the approximating ligature after the gut has been tied over.



End of gut being tied down into the groove in one extremity of the coupler, the other end having been already tied.

Instead of traction cords I have tried the employment of notched springs on the same principle as with the Murphy button, but while this makes the work a trifle simpler and more rapid it necessitates firm pressure being made upon the ends of the coupler through the gut thus contusing it. This is a serious objection to the Murphy button and one entirely obviated where apposition by traction is employed as it is both in the Frank button and in my coupler. My coupler made of aluminum is very light, one-fourth or less the weight of a Murphy button of the same size. Lightness is an important advantage where the gut to be united is in a much injured condition.

While to the expert abdominal surgeon union by suturage may seem easy and be accomplished with a reasonable amount of rapidity, it is not so with the occasional operator. For him to attempt their applica-

tion is not only puzzling and tedious but, should the case be one of emergency, his work will be well-nigh impossible. The threads become tangled, knotted, twisted and mixed. The gut gets bruised and pulpified by prolonged manipulation, devitalized and leaky from punctures and cuts of needles while the surgeon himself becomes exhausted and more tangled up than his sutures.

The "average surgeon," or "occasional operator," as the patronizing expert calls him, will find himself far better satisfied with a simple comprehensive and rapidly applicable device than with one of the above mentioned brilliant and complicated intricacies. To him I would respectfully dedicate my coupler.

DIAGNOSIS, PREVENTION AND TREATMENT OF PUERPERAL INFECTION.*

FREDERICK HOLME WIGGIN, M.D.
VISITING GYNECOLOGIST, CITY HOSPITAL.
NEW YORK CITY.

Thomas Kirkland, Ashby, Eng., in 1774 called attention to the fact that the so-called puerperal fever was a contagious disease. This view was later supported by other independent observers, notably, in 1843, by our own Oliver Wendell Holmes by Sir James Young Simpson in 1846, by Semmelweise in 1847 and by Trousseau in 1856. But it needed the teaching and practical results obtained by Lister, based on the previous work of Pasteur and by the demonstration of the latter in 1880 that streptococci are often found in the lochial discharges of puerperal women suffering from fever and other constitutional disturbances, before obstetric surgeons finally recognized it as a fact that these pathologic manifestations were due to the same micro-organisms, whose entrance into wounds in other parts of the body were followed by similar constitutional disturbances, and that when the wounded maternal parts were kept free from these organisms or their products the puerperal woman during her convalescence was free from constitutional disturbances of a febrile nature.

The practical result of the acceptance of these views and the change in technic in obstetric practice which followed in lying-in hospitals resulted in the practical abolition of epidemics with their high mortality rate, of what was formerly known as puerperal fever, till at the present time, when infection of the mother's wounds does occasionally occur, the constitutional symptoms are mild in character, the disease is readily controlled and the mortality rate a fraction of one per cent. Unfortunately, these results have not been achieved by all physicians in private practice and it seems strange that we are obliged to admit that puerperal wound infection in the ordinary daily practice of physicians is of almost as frequent occurrence and is followed by as severe constitutional symptoms and with as high a rate of mortality as it was fifty years ago. Many physicians have been slow to grasp the importance of the principles underlying modern surgical teaching or, while knowing these principles, they have yet failed to apply them to obstetric work and consequently have not profited by them. They are still too often seeking consolation and explanation of the fever and other constitutional symptoms complicating the puerperal convalescence, in the possibility that the disturbance arises from the beginning of lactation or from the specific poisons causing malarial or typhoid fever, instead of attributing those symptoms to their true cause, in almost every instance, wound infection.

Before considering the diagnosis of abnormal puerperal conditions, it is well to recall the fact that when normal conditions prevail during the puerperium, the pulse rate falls soon after delivery and is slower for a time than usual; that the respirations are normal and that there is little or no rise of body temperature; that increase of pulse rate and of body temperature due to emotional causes rapidly subside, and that similar variations due to an overloaded colon disappear as soon as the bowels move. We should be on our guard, therefore, to quickly recognize that infection of some portion of the wounded maternal parts has almost certainly occurred whenever we find that a puerperal woman during the early days of her convalescence has a pulse rate of 90 a minute or higher, accompanied by a temperature of 100.5 or more, especially if these symptoms continue for more than twelve hours. A careful general examination of the patient should at once be made to exclude inflammatory conditions of the breasts and other sources of error; this should be followed by a local examination and it will probably be found that there are some ulcerating wounds on either perineum, vulva, vaginal walls or cervix, which are covered with a dirty yellowish secretion. If the patient does well for several days and then complains of headache and general discomfort, having at the same time a rapidly rising pulse rate, a chill, a marked elevation of body temperature and pains in the lower abdomen, and if on local examination an enlarged, doughy and tender uterus be found, with its cervix patulous and the lochial discharge purulent in character, with less color than usual, it is reasonably certain that the trouble is due to the most common variety of puerperal infection, endometritis caused by the absorption of the products of decomposition, and that on examining the interior of the uterus a retained portion of the membrane will be found; or there will be discovered a roughening of its inner surface at the placental site caused by adherent portions of the placenta. When the trouble is confined to this region, the course of the disease is limited and in a few days the constitutional symptoms will subside and the disorder become chronic; or the entire endometrium may become involved in the process, in which case the condition is more serious, the constitutional symptoms more marked, the lochial discharge having more odor and less color than in the milder forms of the disease. As a rule, the trouble does not extend beyond the endometrium, but when it does, the evidence of its extention are repeated chills, a daily variation of several degrees of temperature, the usual symptoms of pus formation, the rise of temperature continuing until the abscess is opened and evacuated. The peritonitis following this form of the disease is usually circumscribed. A bacteriologic examination of the uterine secretions will probably demonstrate the presence of staphylococci and establish the fact that the disorder is due to their special action.

When the cause of the septic trouble is due to the direct invasion of the tissues by the streptococci the constitutional symptoms are much more severe in character; the very rapid and weak pulse especially attracts attention, while on the other hand the local symptoms are less marked in character; the uterus on examination is found less sensitive to pressure, of proper size; the cervix is closed and the lochial discharge diminished in quantity or absent, or free from both odor and color. Symptoms of general suppurative peritonitis may be the

* Read before the New York County Medical Association, Feb. 17, 1902.

first local sign of the infection to attract attention. The symptoms of this serious complication usually manifest themselves between the second and seventh days of the puerperium and are characterized, in addition to the ones already mentioned, by intense pain which at first is limited to the lower abdomen but which gradually extends upward and is accompanied by tympanites. Septicemia, the most fatal form of wound infection, results from the direct invasion of the tissues by virulent streptococci and the absorption at the same time by the tissues of the toxins of decomposition produced by the presence of staphylococci. Its characteristic sign is the great amount of bodily prostration which accompanies the other constitutional symptoms of wound infection. Pyemia manifests itself by the occurrence, ordinarily in the second week of the convalescence, of recurring chills accompanied by a widely fluctuating temperature and the formation of abscesses in various parts of the body. Broncho-pneumonia is a more or less frequent consequence. Phlegmasia alba dolens manifests itself in the second week of the puerperium by pain along the course of one or other of the femoral veins, usually the left, accompanied by swelling of the limb from above downward. When the infection arises from the invasion of the wounded tissues by gonococci, it may usually be determined by the coincident occurrence of ophthalmia neonatorum. The presence of the Klebs-Loeffler bacilli in the wound may be determined by the appearance of the characteristic membrane on the wounded surfaces combined with the usual constitutional symptoms, and confirmed by a bacteriologic examination of the lochial discharge.

The patient's wounds may also be infected by the bacillus coli communis, the pneumococcus and others. It is important, as soon as we are aware of the fact that our patient's wounds have become contaminated, that a bacteriologic examination when practical be made of the lochial discharge, as the information derived therefrom will aid us in deciding the form of treatment to be carried out. Malarial infection can be excluded, as a rule, by remembering the fact that in septic poisoning the pulse rate is higher than the temperature, and by the absence in the blood of Laveran's bodies, whereas in malarial infection they are present and the temperature is higher than the pulse rate. Typhoid fever may be excluded by the absence of the characteristic eruption and the negative result of Widal's reaction.

The causes of puerperal wound infection having been proved to be the result of the introduction into the parturient canal of septic material either before, at the time of or subsequent to delivery, the great responsibility therefore devolves upon the obstetric surgeon of preventing its occurrence, which can ordinarily be done by his bearing in mind a few easily comprehended principles, by the exercise of watchfulness and by attention to a few simple details which are easily carried out even in the homes of the poor. It should be constantly borne in mind by the physician that these germs may be brought in contact with the parts by the act of copulation, by the hands of the patient, nurse or physician, especially if wounds exist in the canal, or by means of unsterilized instruments, syringes used for both enemas and vaginal douches, dirty bedding, linen and towels, neglect to properly care for the patient's body and to empty the intestinal canal.

The nurse selected to attend an obstetric case should be chosen with as much care, if practicable, as one would be for a patient on whom an abdominal operation is to be performed, or in other words, she should understand the prime importance of cleanliness and be sufficiently trained to carry out the necessary details, as well as to be able to care for the infant; it is as well when possible to have the nurse in attendance on the patient a short time before the expected delivery, and the necessary instructions should be given to her to empty the patient's bowels and to secure a good condition of her skin by means of hot baths, especially that of the external genitals and the anal region, before the expected delivery. At the first indication of labor the rectum should be washed out by an enema of soapsuds and, as soon as this has been accomplished, the mother should be given a final hot bath, after which the genitals and the anus should be washed off with a solution of carbolic acid and the parts protected by a sterilized napkin—or what is better, an obstetric pad—until the end of the second stage of labor has been nearly reached, after this preparation each act of urination or defecation should be followed by again thoroughly cleansing the external genitals and the anal region, by washing them off thoroughly with an antiseptic solution.

The physician on his arrival should be careful to disinfect his hands before making a vaginal examination, and this he can readily do by scrubbing his hands and arms in hot running water, preferably using tincture of green soap and scrubbing them for ten minutes with a fiber brush. The hands should next be immersed in alcohol; the nails being cleansed with a piece of sterilized gauze wet in the alcohol; they should next be immersed in an alcoholic solution of bichlorid of mercury of the strength of 1 to 500, which solution should be removed from the hands by sterilized water before the lubricant is applied to them, which lubricant should be contained in a collapsible tube, or the physician after cleansing his hands may put on rubber gloves that have been boiled for at least half an hour and have then been soaked in a one per cent. solution of lysol. As few vaginal examinations should be made as possible during labor, the required information, after the position of the child has been determined, can be obtained by external examination, with the exception of that relating to the duration of labor. As the second stage of labor draws to a termination, the obstetric pad should be removed, the patient placed on a sterilized sheet and her thighs and abdomen protected with sterilized towels, or with those which at least have been recently washed, and the obstetrician should wear a gown or an improvised one made from a sterilized sheet.

It is, of course, of the utmost importance that the membranes and placenta should be removed intact; the physician should make certain of this by carefully inspecting them after they have come away, and if he finds that portions of either have been retained, he should, after thoroughly sterilizing the external genitals, the vagina and his hand and arm, determine this by an intra-uterine examination, removing them if found; this procedure should be followed by an irrigation of the uterine cavity with sterile salt solution followed by hydrozone. This complication will, however, seldom occur if the physician abstains from administering ergot to his patient until after the delivery of the placenta.

As soon as the labor is over and the patient has had time for a little rest, the physician should make a careful inspection of the perineum, vulva, vaginal and cervical tissues and if any laceration of the parts are found they should be at once repaired and the parts washed

with sterile salt solution and hydrogen peroxid, and protected with sterilized pads. No intra-uterine douche should be given unless it has been necessary to introduce the hand into the uterine cavity. In the after-treatment of the patient under normal conditions, vaginal douches should be omitted, the nurse being directed to keep the external genitals and the anal region in good order by carefully washing and disinfecting them after each act of urination and defecation.

If, on visiting the patient, the physician finds an accelerated pulse and elevated temperature, he should carefully examine her and afterwards make a local examination, first disinfecting his hands and instruments. If he finds an ulceration of the perineum, vagina or cervical tissues, he should thoroughly wash out the vagina with salt solution and follow this with hydrozone or other strong solution of peroxid of hydrogen; if in the judgment of the physician it is necessary to follow this treatment with other irrigations of the vagina, he should administer them himself and not leave them for the nurse. If the septic trouble is more serious in character and is due to the retention in the uterine cavity of decomposed septic material, the patient should be put on a table and placed under the influence of an anesthetic and, after the external genitals and vagina have been carefully disinfected, the uterine cavity should be explored with the finger, which has also been carefully disinfected, or—if the operator is trained and skilful—with the curette, and the offending material removed. The cavity of the organ should then be thoroughly washed out with saline solution followed by hydrogen dioxid and an application of Monsell's solution if the cavity has been curetted. If the operation has been well performed the patient's constitutional symptoms will probably disappear and no further uterine intervention will be necessary. It will, however, probably be best for the physician to give the patient a vaginal douche of saline solution, followed by hydrogen dioxid, once or twice a day for several days. If the constitutional symptoms persist and the condition becomes chronic, it may be necessary to again explore the cavity of the uterus. If the trouble extends beyond the endometrium and an abscess forms, it should be evacuated by means of a vaginal incision, or if there be a bilateral pyosalpinx to deal with, it may be necessary to open the abdomen and remove the diseased tubes and uterus. If it be determined after careful examination that the septic condition of the patient is due to the direct invasion of the tissues by the virulent streptococcus, the physician should, in the writer's opinion, after thoroughly cleansing the external genitals and the vagina of the patient, dilate the cervix and explore the uterine cavity with the finger or with the curette, and then, after thoroughly irrigating the cavity with saline solution and hydrozone, should make an application of Monsell's solution. If the constitutional symptoms of the patient, as the result of this treatment, do not show improvement in a few hours, an intravenous infusion of a considerable quantity of saline solution should be given and the advisability of opening the abdomen and removing the uterus considered, bearing in mind, as has been pointed out by Vineberg, that the uterus is the focus of the disease and that the patient's system will eliminate a reasonable amount of the infective material by the skin, kidneys and intestines; therefore, if the further production of the poison can be stopped, there is a reasonable chance of that already in the patient's system being eliminated and recovery following.

Although a few observers have claimed benefit to have accrued to their patients suffering from this form of infection from the use of Mamorek's antistreptococcus serum, the burden of testimony is against its having been of any avail in these cases; if used, from 10 to 20 c.c. should be injected into the patient's body every 12 hours till she shows signs of improvement, or a reasonable quantity has been used. When from the severe prostration and other constitutional symptoms which accompany it, there is reason to believe that the patient is suffering from septicemia, she should at once be stimulated and given the benefit of a large intravenous saline infusion slowly administered, the temperature of the solution in the reservoir being 120 F., and if she rallies in response to this treatment the vagina and uterine cavity should be cleaned out by thoroughly washing them with saline solution followed by hydrogen dioxid, and the cavities loosely packed with sterilized gauze soaked in ozonized glycerin, which will tend still further to disinfect the parts: the gauze should be removed in from eight to twelve hours and the application repeated. If under this treatment there are signs of improvement, it may be continued at lengthening intervals, or the propriety of more radical measures be considered. If there is no improvement in the patient's condition, further operative treatment will be of no avail. If pyemic conditions are recognized before the onset of pneumonia, there may be some hope under favorable conditions of saving the patient by cleansing and disinfecting the external genitals and vagina, followed by the prompt performance of an abdominal hysterectomy. When thrombosis of the femoral vein occurs, its course should be painted with iodin, the limb wrapped in cotton, bandaged and kept in an elevated position, which should be maintained for two weeks after all swelling has disappeared. Abscesses should be promptly opened.

In the treatment of the various forms of puerperal wound infection there is little to hope for in the use of drugs, except as temporary aids, the physician's reliance being placed rather on the administration of proper nourishment, increasing the activity of the skin, kidneys and bowels, the internal administration of large quantities of saline solution by means of enemas, injections under the skin or into the patient's veins, according to the urgency of the symptoms, and appropriate carefully considered local treatment, which must be decided for each case as it arises.

Curettage and other operative measures should not be universally condemned because when performed by inexperienced and untrained men, or under unfavorable conditions, they have more often been followed by harmful rather than good results. The importance of an early recognition of the fact that the patient's wounds have become infected can not be overestimated, for on this the physician must rely to institute proper local treatment at an early stage of the trouble and before the patient's system is overwhelmed by the poison, for on this must largely depend whether or not the prognosis of the graver forms of the disorder is to be more favorable in the future than in the past.

55 West 36th Street.

Salicylic Acid in Strawberries.—Portes and Desmoulières have succeeded in isolating crystallized salicylic acid from strawberries. The *Gaz. Méd. Belge* of March 13 mentions this curious fact, and observes that it is important in the study of adulterating substances in preserves, syrups, etc., containing strawberries.

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TREATMENT OF DIPHTHERIA WITH ANTITOXIN.

The time is long past when there could be any difference of opinion as to the utility of the antitoxin in the treatment and in the prevention of diphtheria and, at the present day, after abundant time has elapsed for the enthusiasm aroused by an important innovation to subside, it may be accepted as the deliberate judgment of the medical profession that the discovery of the antitoxin of diphtheria must rank with that of anesthesia and that of vaccination as among the most beneficent in the history of medicine. Statistical evidence to this effect has been forthcoming in overwhelmingly convincing amount and it would appear almost superfluous to add thereto. Nevertheless, the results of a study of the cases of diphtheria treated in the municipal hospital of Mühlhausen, a small manufacturing city of Germany, both before and since the introduction of the antitoxin are not without interest. Thus, the percentage of mortality from diphtheria was in 1892, 53.4; in 1893, 55.3; in 1894, 51.7; in 1895, 38.5; in 1896, 28.8; in 1897, 16; in 1898, 20; in 1899, 15.1; in 1900, 18.7. Among the cases of pharyngeal diphtheria the mortality percentage was in 1892, 20; in 1893, 35; in 1894, 37.1; in 1895, 19.4; in 1896, 26.2; in 1897, 8.6; in 1898, 14.8; in 1899, 7.1; in 1900, 8.1. Of the cases of laryngeal diphtheria the percentage was among those not operated on: in 1892, 33.3; in 1893, 81.8; in 1894, 58.3; in 1895, 100; in 1896, 0; in 1897, 10; in 1898, 12.5; in 1899, 7.1; in 1900, 8.3; while among those operated on the percentage was in 1892, 67.5; in 1893, 67.7; in 1894, 70.9; in 1895, 70.7; in 1896, 33.3; in 1897, 29.4; in 1898, 35.3; in 1899, 34.4; in 1900, 37. At the same time a large reduction in the number of cases of laryngeal diphtheria requiring operation was noted after the institution of antitoxin treatment. That the favorable results, which correspond closely with those observed elsewhere, are not due to the character of the disease is shown by the fact that the cases during the years 1899 and 1900 were more severe than at any time in the last twenty years.

The plan of treatment pursued consists in the administration immediately of an injection of antitoxin to every child admitted to the hospital, the amount varying with the duration and the severity of the symptoms. Thus, in cases of pharyngeal diphtheria from 600 to 1500 immunity units are given, in accordance with the extent of the deposit, the degree of temperature elevation and the duration of the disease, the same dose or a smaller one being repeated on the following day and if necessary also on the third day. In cases of laryngeal stenosis, not less than 1500 immunity units are injected at once and the same dose is repeated in from six to twelve hours and possibly from 1000 to 1500 units on the following day. In grave cases, in which the general intoxication is profound, a dose of 3000 immunity units is injected at once. Generally 4000 or 4500 immunity units are sufficient, but in rare cases as much as 6000 units are required. In some cases operative intervention has been averted by the administration of an emetic, the stenosis being, as a result, overcome for a few hours, until the antitoxin has time to exert its influence.

The local treatment in cases of pharyngeal diphtheria consists in the use of gargles of potassic chlorate or boric acid, but in the case of small children, incapable of gargling, local treatment is entirely foregone. Only in severe septic cases are applications of solution of ferric chlorid, 1 to 5 or 1 to 10, made to the pharynx and sprays of antiseptic solutions practiced. The use of the ice collar and the swallowing of bits of ice is practiced only when the glands of the neck are enlarged and deglutition is painful. The general measures consist of rest in bed, a nutritious diet and the treatment of complications. Cases of laryngeal diphtheria and of tracheotomy are kept in a room whose air is saturated with steam.

There are at present few specifics in therapeutics and the antitoxin of diphtheria must be considered one of the most important and most reliable of these. To be most effective it should be employed early and in sufficient dosage. No seriously unpleasant secondary results need be feared from such a course and if these injunctions be observed, we may hope that the mortality from diphtheria, which already has been reduced to half of what it formerly was prior to the introduction and general employment of the antitoxin, will be still further reduced. Even now much of the terror formerly aroused by the development of a case of diphtheria in a household has been removed because of the more hopeful outlook in the individual case and of the powerful weapon for attack and defense that has been placed in the physician's hands in the form of the antitoxin injected for both curative and prophylactic purposes.

PUERPERAL INFECTION IN PRIVATE PRACTICE.

Maternity hospital statistics show low mortality from sepsis. Private practice, however, still has too many cases of puerperal fever. Often the physician is to blame through ignorance of the proper technique of surgical cleanliness, or through a too great readiness to interfere.

In an article* in the present number of THE JOURNAL is the following:

"It seems strange that we are obliged to admit that puerperal wound infection in the ordinary daily prac-

* Wiggin: Diagnosis, Prevention and Treatment of Puerperal Infection. Page 1005.

tice of physicians is of almost as frequent occurrence and is followed by as severe constitutional symptoms and with as high rate of mortality as it was fifty years ago. Many physicians have been slow to grasp the importance of the principles underlying modern surgical teaching or, while knowing these principles, they have yet failed to apply them to obstetric work and consequently have not profited by them. They are still too often seeking consolation and explanation of the fever and other constitutional symptoms complicating the puerperal convalescence, in the possibility that the disturbance arises from the beginning of lactation or from the specific poisons causing malarial or typhoid fever, instead of attributing those symptoms to their true cause, in almost every instance, wound infection."

Dr. Wiggin has given utterance to what is, unfortunately, too true. We are almost ready to make the statement even stronger than he has made it. We believe we are safe in saying that statistics, if carefully compiled, would show that in private practice the mortality from puerperal sepsis is greater to-day than in the preaseptic period. The great maternity hospitals, like the Rotunda at Dublin or the Maternity at Prague, show an astonishingly low death rate from this cause, and this in spite of the fact that students witness and assist at the deliveries and are permitted to make examinations. But it is this very fact of the striking reduction in the number of fatalities from puerperal fever in these great lying-in hospitals, where a few decades ago this dread disease destroyed so many lives, that has made physicians bold. Knowing that asepsis and antisepsis have wrought the marvelous change in the morbidity and and mortality records in the hospitals, the physician feels that if he is aseptic in his work his record will be as good and he can do practically what he will. The old rule of "meddlesome midwifery is bad" is cast aside. With improved forceps of several patterns, with chloroform given with practically no danger, even the careful physician feels justified in early instrumental interference, resorts to version on slight provocation, is indifferent to lacerations because he can sew them up immediately, is digitally diligent in determining the progress of the labor; in fact, he hesitates at none of these because he has practically no fear of sepsis. And why? Because by his side is a bowl of bichlorid solution or of carbolic acid or of some other favorite antiseptic into which he dips his fingers, his silk, his forceps, perhaps, flattering himself that in this way he is rendering himself clean and protecting his patient from harm. We need not go into the details of how it all happens. There is a slip somewhere in the technique of his asepsis and the deed is done. The brush with which he cleans his hands may be foul, the towel soiled, or with clean hands he handles a chair or the patient's hand—in any one of a thousand ways he may commit an error that will account for the unfortunate result. And then, though he may have been scrupulously careful, an ignorant nurse may spoil it all with her dirty douche-point or her unclean hands.

These tragedies are occurring every day, and that, too, right in the midst of our large cities where are hospitals and medical schools in which the technique of surgical cleanliness is properly taught. It is time that the profession should wake up to the fact that an operation that is surgically unclean is often worse than no operation at all; that a careless obstetrician, overconfident because of his fancied protection by his so-called asepsis, may be a breeder of most serious mischief. The statement that the lying-in woman is aseptic is so true that the physician should enter upon the task of the delivery of such an one with as much caution and as much intelligent, painstaking preparation as in entering a surgically clean abdominal cavity. Most physicians are conscientious in these matters and the fault lies, when these mistakes occur, in some little slip in the aseptic measures or in a too great readiness to interfere, thus producing serious local damage that favors infection. The remedy lies in a clearer knowledge of the importance of details in asepsis and in a faithful observance of the same in every case.

INFORMAL PRESCRIBING AND ITS DANGERS.

Not infrequently a physician is tempted in the case of a friend or intimate acquaintance to give a therapeutic hint rather than a formal prescription. He may name some simple drug that can be taken with benefit. Sometimes the motive will be no more than the avoidance of prescription rates in the dispensing of the drug suggested. The longer a physician is in practice the less is he liable to make this mistake, for mistake it always is and one that may sometimes be followed by even serious consequences. Probably every physician of considerable experience has had occasion to regret such occurrences. No matter how apparently unmistakable word-of-mouth directions are, the non-medical mind can not be depended on to follow them as intended. People seem to abandon what appears the plain path of ordinary common sense at times on the presumption that they are following their physician's directions.

As a warning against this practice we have collected from recent literature some cases that show the serious evil that may flow from it. How easy it is, for instance, to suggest that a lotion of carbolic acid, 2 to 5 per cent. in strength, be used to wash off a small wound, or abraded surface, on a finger or toe. Suppose the patient, as is not unlikely, concludes that the use of a wet dressing, the gauze being soaked in the cleansing solution, may do good in preventing all danger of infection—a danger that the physician usually points out very clearly. The result may be gangrene of the finger or toe. Harrington[1] read a paper before the Massachusetts Medical Society in which he collected 132 cases of gangrene following the use of carbolic acid solutions, of from 1 to

1. Boston Med. and Surg. Jour., May 2, 1901.

5 per cent. strength. In not a few of these cases the solution was applied by the direction of a physician. Harrington himself has seen eighteen such cases in the Massachusetts general hospital and in most of them amputation of the finger or toe involved was rendered absolutely inevitable.

Effects almost as serious have followed off-hand therapeutic hints for purely medical affections. At a recent meeting of the Harvard Medical Society the case was reported of a matron who had taken some 150 drops of wintergreen oil within a few hours because her son-in-law, a physician, had suggested ten-drop occasional doses of this drug for certain presumably rheumatic pains from which she suffered from time to time. An extremely acute exacerbation of the painful condition led her to take the amount of the drug mentioned. Her medical relative-in-law found her cyanotic, extremely weak, almost pulseless and with sighing respiration. Experiences analogous to this are very common in the use of the coal-tar products for headaches, though the public has been very generally warned with regard to the possibilities of harm from these drugs and serious symptoms are not so frequent as they once were. Hints dropped as to the value of nux vomica for run-down conditions have often been followed by muscular twitchings and even more serious cramp-like effects because non-medical persons were convinced that if a little was good, a good deal must surely be better.

Serious results from the use of so well known a poison as arsenic are not often reported, but a case has been recently under observation. The patient suffering from psoriasis in a mild form was advised to take Fowler's solution in five-drop doses three times a day. He improved rapidly under the treatment. The following spring he suffered from a relapse of the psoriasis and of his own accord took Fowler's solution once more. This time it failed to relieve as promptly as before. The patient increased the dose until he was taking twelve drops three times a day. Acute symptoms of gastric disturbance developed that were not attributed to the arsenic. With the idea that the psoriasis was a manifestation of the disturbed general condition the arsenic was continued. Finally a physician was consulted, but only after all the ordinary remedies for gastro-enteritis had failed did the thought of possible poison occur. By this time an arsenic neuritis had developed and it is doubtful if the patient will ever be quite himself again. At least, he is not after a year of most careful treatment.

When a condition is serious enough to call for a physician's attention, the giving of a formal prescription is likely to prove least liable to subsequent inconvenience. It even seems better, as a rule, not to give many details as to the drugs that are being prescribed. Prejudices with regard to certain drugs exist and the negative suggestion thus brought into play may prove sufficient to counteract, to some extent at least, the effect of a special drug that otherwise would be helpful. Latin prescription writing has lost much of its mystery for the non-medical, but it still remains a judicious means of maintaining a certain wholesome secrecy as to the drugs that are being employed. It is not that the physician fears that the abolition of this secrecy will in any way lessen his usefulness. Familiarity with drugs, however, is apt to bring them into undeserved contempt. The formality of the prescription remains the most trusty safeguard for patient as well as physician against such dangers as we have pointed out.

RARE COMPLICATIONS OF TYPHOID FEVER.

Numerous instances of the localization of the bacillus of typhoid fever in various parts of the body and consecutive suppurative processes have been recorded. There are not a few cases of typhoid abscess of the thyroid gland. Mastitis may occur in typhoid fever and, according to Thomas McRae[1], it usually develops late in the disease, occurring with about equal frequency in both sexes, both breasts being involved in about one-half of the cases. In women the process does not seem associated in any special manner with active function of the gland. In a full report of a case of brain abscess in typhoid fever, due to the typhoid bacillus, McClintock[2] notes that in the literature he has found nineteen cases of meningitis, complicating typhoid fever, in all of which the bacillus was present, generally in pure culture; and five cases of brain abscess, in none of which the bacillus was found. The case described by McClintock may be said to be typical, the abscess—in the left temporal lobe—probably began to develop about the fifth week and led to death with basilar meningitis on the sixty-sixth day. A full study of the organism isolated leaves no doubt that it concerned a true bacillus typhosus.

The exact mechanism of these and similar, e. g., the osseous localizations of the typhoid bacillus is not clearly understood. Undoubtedly it is intimately associated with the distribution of the natural and acquired antibacterial substances in the blood. The importance of the so-called complement (alexin or cytase) in bactericidal action is now generally recognized and it is not difficult to believe that in infections this substance may be used up and disappear more or less completely from the serum. Metalnikoff and others report that in chronic suppuration and in the absorption of dead tissue the complements are diminished or absent; and Ehrlich and Morgenroth found that as the liver degenerates from phosphorus poisoning the complements disappear from the serum. Now it may be that when typhoid bacilli enter the blood they are drawn together into clumps by the agglutinins present, and thus lodged in a capillary loop they are hindered by the protective substances in the blood serum from further proliferation until by some accident or otherwise the complement is bound and used up by substances elsewhere in the body. The conditions seem too complex and too little understood to permit of any more definite explanation.

1. Johns Hopkins Hospital Bulletin, 1902, xiii, 20-23.
2. Amer. Jour. Med. Sciences, 1902, cxxiii, 595-603.

THE NEXT ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

The next annual meeting of the American Medical Association promises to be even better than that of last year. The indications are that the meeting will be much more largely attended and the programs promise a very high order of scientific work in the various sections. Last week we printed a list of the prominent hotels at Saratoga Springs, which of itself shows that that town will be able to take care of the Association in a most satisfactory manner. Besides the hotels indicated in that list, there are a large number of boarding houses and minor hotels, so that there can not possibly be any doubt that ample accommodations will be provided for all who attend the session. As regards prices, like all fashionable resorts where the hotels are open only part of the year, the prices of some will be high enough to satisfy the most fastidious; but on the other hand, there are plenty of good hotels and boarding houses having rates within the reach of all. While the railroad rates have not been announced, the Committee on Transportation believes that it will secure one-half rates on some of the roads at least, if not on most of them. This, however, has not yet been promised.

TWO MORE COLLEGES COMBINE.

One of the conditions often complained of in this country is the large number of medical colleges and the consequent unnecessary output of medical graduates each year. One of the good signs of the times is the fact that the evil is remedying itself gradually and surely. We recently noted the fact that the colleges in Ohio, especially in Cincinnati and Cleveland, were considering the advisability of combining. Some combination of colleges in Kansas City is also talked of, but it is only talk thus far. According to a circular just received, the two regular schools of Denver, viz., Gross Medical College and the Denver College of Medicine, have just combined, the name of the new school to be the Denver-Gross College of Medicine. It will be the medical department of the University of Denver. Each of the old schools agree to turn over to the new one all its furniture, apparatus, instruments, charts, etc., free of all incumbrances. The business affairs will be in the hands of a board of trustees composed of nine members made up of those connected with the old schools. The faculty of the combined school is a large one and takes in practically all the men who were connected with the old faculties. This will make the Denver-Gross College of Medicine one of the strongest in the West.

NURSES AND MATRIMONY.

The industry of nursing is apparently a captivating one to young women, but it has its drawbacks. It appears that the future nurse must be a celibate. There is said to be a decided tendency among hospital physicians and matrons in London at the present time to discourage the offers of services on the part of engaged young women or those who are likely to include matrimony in their life plans. It is also said that some are suspected of utilizing their opportunities to inveigle medical men and those prospectively such into pedotrophic partnerships, the nursing course being only a means to the end. It seems a pity that those who are as well suited to make and adorn a home for a deserving man, as are many of the nursing profession, should be debarred from the privilege, the more so when we consider how well adapted their training will make them for such function, but it seems to be the trend of the times. This, of course, is not speaking of the nurse adventuress who is an occasional and deplorable fact; her case is another story. Perhaps with the multiplication of training schools, which is the order of the day, there will be found a way out, or provisions may be made for a special prematrimonial education in nursing, in which no vows, given or implied, will be required. The philanthropic young woman can then work out her destiny without let or hindrance.

FRAUDULENT USE OF ANOTHER'S FAME.

A decidedly bold fraud has been perpetrated upon a Chicago surgeon by the insertion of the following advertisement in the Kansas City *Journal*:

"Patients Notice! Always ask Cancer or Tumor Specialists to show their State Board of Health License before taking treatment. If not licensed they can not cure you. Cancer can not be cured by needle injection, plaster or any other way but by Dr. John B. Murphy's System. Address 16 State St., Chicago." It will be noted that the surgeon's name is vaguely used to explain the supposed method of the fakir and his opinion of other means of cure. The fact that there is no such system is not known by the general public, who may readily suppose that such a well-known surgeon has a method of his own for every important disease. The nomenclature of operations and systems of treatment is a medical topic foreign to the general public, and the shrewd wording leads the careless reader to infer that the famous surgeon is to be addressed. Evidence of this effect is forthcoming in the mail addressed to him from those desiring treatment. The author of this advertisement got himself into the reach of the law by ordering a change of address from 16 State street—a saloon which is apparently innocent as far as this particular offense is concerned—to a so-called "Red Cross Hospital" in the disreputable West Madison street district. The forged signature of Dr. Murphy on this order would have passed on a check, we are informed.

SURGEON-GENERAL STERNBERG.

The Secretary of War has transmitted to Congress a recommendation that Surgeon-General Sternberg, when his active service is legally terminated next June, be retired with the rank of Major-General. This is endorsed by General Corbin, Adjutant-General of the Army, and with it is communicated a biographical sketch of Dr. Sternberg with a list of his leading contributions to medicine up to 1893. This naturally does not include some of Dr. Sternberg's best work, but it makes a showing that ought to convince congressmen that in thus advancing him a grade they are honoring one who has been an honor to his country as well as a faithful public servant for forty-one years, much of the time in arduous and perilous service in the field and on the frontier.

Indeed, we can say, without disparagement of any of his predecessors, that as a scientific medical man he has exalted the office of surgeon-general of the United States Army and that at the present time we are not aware that such a position is anywhere held by anyone of superior or even equal scientific reputation as an original investigator and authority. If, as General Corbin says, the Surgeon-General of the Navy was entitled by law to be retired with a rank equivalent to that of major-general, by what rule of justice can not the like officer of the Army with a wider range of work and greater responsibilities be retired with the same rank and emoluments? Dr. Sternberg's record is well known to the members of the medical profession, which has shown its appreciation by his election to many honorable positions and honorary memberships both here and abroad. The members of Congress can be assured that by the legislation requested they only carry out the wishes of the class of their constituents both in and out of the medical profession who can best judge of the propriety and need of such action. It is to be hoped that the recommendation will be promptly followed and the act made effective before the time of Surgeon-General Sternberg's retirement.

TUBERCLE BACILLI IN CHEESE.

During recent years much study has been given to the subject of tubercle bacilli in dairy products, especially milk and butter. This study has been in a large measure instrumental in bringing to notice a group of bacilli, which are acid-proof, like the tubercle bacillus, but which differ from it in other ways. It is not improbable that these bacteria have been sometimes mistaken for the tubercle bacillus in milk and butter; this mistake could occur the more readily if the identification of the tubercle bacillus was mainly dependent upon its staining properties. Still there is little doubt but that true tubercle bacilli are found in all of these dairy products, and that they may become a real danger when taken into the bodies of predisposed individuals. The recent agitation regarding the relation of human and bovine tubercle bacilli has not materially altered the views, previously held by competent medical men and investigators, that tubercle bacilli in dairy products may produce infection in man. If tubercle bacilli are found in milk, they are naturally also present in cheese. Experiments were made in Switzerland over two years ago, to determine the fate of tubercle bacilli in cheese, and it was demonstrated that they died out between the thirty-third and fortieth day in cheese made after the Emmenthaler method, but considerably later in cheese made approximately after the Cheddar method. The experiments regarding the time that tubercle bacilli would remain alive in Cheddar cheese, which is made in the approved manner, have been repeated by F. C. Harrison.[1] An emulsion of tubercle bacilli was added to milk at the same time as the rennet, and cheese was made from the milk in the manner required to obtain typical Cheddar cheese. After various lengths of time, guinea-pigs were inoculated with portions of the cheese and it was found that the tubercle bacilli died out somewhere between the sixty-second and seventieth days. Even some time before this, the number of tubercle bacilli was small or else they were much reduced in virulence, for the guinea-pigs inoculated on the forty-second and fifty-second days were all lightly infected. Harrison concludes that these experiments justify the statement that Cheddar cheese contains no living tubercle bacilli, that might naturally be present, when it is ten weeks old; and hence no danger need be apprehended from eating living tubercle bacilli in Cheddar cheese.

1. Cent. f. Bakt., Abtheilung 1, March 3, 1902, 250.

Medical News.

ALABAMA.

New Hospital at Montgomery.—Ground was broken, April 2, for the new hospital of the Sisters of Charity at Montgomery, to cost $100,000.

Birmingham Medical College.—At the graduating exercises of this college, March 28, Dr. Benjamin L. Wyman, dean of the college, conferred degrees on a class of 8, and Hon. John M. Caldwell, Anniston, delivered the address to the graduating class.

Medical College of Alabama.—The forty-third annual commencement of this institution was held in Mobile, April 8. A class of 13 received diplomas from the dean, Dr. George A. Ketchum. The address was delivered by Prof. Julius Tutwiler Wright, Mobile, who chose for his subject "Criminology."

New Hillman Hospital.—The arrangements for the erection of the New Hillman Hospital, Birmingham, are nearly completed. The association has already $33,000 in hand toward the $50,000 which will be required for the construction of the building. The Birmingham Medical College will erect its new building to cost about $40,000 on the lot next to the hospital.

CALIFORNIA.

Oakland Medical College.—Ground was broken, March 31, for the new building for the Oakland College of Medicine and Surgery. The building is to cost about $15,000.

San Francisco Board of Health.—After injunctions, counter-injunctions and threatenings, the old and the new city boards of health are now resting and awaiting further legal developments.

Medical Electrician Acquitted.—A medical electrician of Los Angeles, arrested on the charge of practicing medicine without a license, was acquitted by a jury, April 3. Her sole defense was that she acted under the instructions of a regularly qualified physician.

Physicians Refuse to Pay Local License Fee.—Ten of the thirteen practicing physicians in Chico were arrested, March 31, for refusal to pay the city license. Under an ordinance of Chico physicians are required to pay $5 per quarter license. This ordinance has been in effect since 1897, and until this time the license has been paid. Now the physicians have decided to test the ordinance and have organized for that purpose.

ILLINOIS.

Insane Transferred.—Watertown hospital has transferred 20 male and 30 female incurably insane patients to the new state institution at Bartonville, near Peoria.

Raising Funds.—The Julia F. Burnham hospital board, Champaign, has already raised $11,500 of the $15,000 required to obtain $5000 conditionally offered by William B. McKinley.

Railway Hospital at Decatur.—The Wabash Hospital Association has accepted the offer of the citizens of Decatur of a site for the Middle Division Hospital. Plans have been prepared and a building to cost $50,000 will be erected.

Chicago.

Dunning to Bartonville.—The superintendent of Cook County Insane Asylum has transferred 65 incurable women to the Hospital for the Incurable Insane.

Air-Borne Diseases Rife.—All the air-borne diseases are again as rife as before the March rains, and the high winds and dry surfaces give little present hope of relief.

Increased Mortality.—As compared with the week previous the Department of Health reports an increased mortality last

week from all the chief causes of death except scarlet fever, pneumonia and violence. The 562 deaths represent an annual rate of 16.10 per 1000 of population, as against 14.19 and 13.8 respectively for the previous week and the corresponding week of 1901, or more than one-seventh and more than one-fifth increase respectively.

Eye and Ear Hospital Internes.—The annual examination for internes for the Illinois Charitable Eye and Ear Infirmary will be held at the infirmary, 227 W. Adams Street, Chicago, commencing at 2 p. m., Monday, April 28, and continuing April 29 at 1 p. m. The number of positions to be filled is three, and the length of service is one year. This examination is open to any practitioner of medicine or graduate of any recognized medical college.

Vaccination in Zion.—Frightened either by the presence of smallpox in Zion College or by the bill of expense he will have to meet, Dowie has issued an order "allowing" his subjects to be vaccinated. Dowie will have to meet a bill of expense when the epidemic is over. He will have to pay $25 a week for the care of each patient at the Isolation Hospital, and besides he will have to pay $3 a day for the services of four city policemen who have been enforcing the quarantine.

Chicago Lying-In Hospital Report.—The annual report of this hospital shows that during the last year 1082 patients were attended, 142 of whom were confined at the hospital and more than 11,000 visits were made. During the last four years not a single maternal death occurred in the out-service. The incubator ward had 13 inmates, of whom 10 survived. The school for nurses trained 63 nurses in obstetrics during the year. The medical board now includes Dr. Joseph B. De Lee, representing the Northwestern University Medical School, Dr. J. Clarence Webster, representing Rush, and Dr. Frank B. Earle, representing the College of Physicians and Surgeons.

The Officer-of-the-Day Recommends.—The medical officers-of-the-day recently established at Cook County Hospital have made from day to day the following recommendations: 1. That the number of visitors to the hospital be restricted. 2. That a convalescent home be established. 3. That rollers be placed on all beds in the hospital. 4. That closer watch be kept to prevent smuggling of liquor to patients. 5. That convalescents be permitted to have more out-door recreation. 6. That out-door exercise and tennis be prescribed for internes and nurses. 7. That a dressing-room be provided for non-septic patients. 8. That female patients be permitted to visit the lawn. 9. That the wards and beds be constantly painted.

IOWA.

Mercy Hospital Bequest.—By the will of Michael Hennessey of Dubuque, $50,000 is bequeathed to Mercy Hospital in that city.

Hospital for Iowa Falls.—Initial steps have been taken toward the establishment of a hospital in Iowa Falls. A site has been secured at a cost of $4500, of which one of the owners donated $1500. Plans have been prepared for the building which, when equipped, will cost between $18,000 and $20,000. Toward this expense $6000 has already been secured.

Osteopaths Recognized.—The Iowa house has passed the senate bill in recognition of the osteopathic school of physicians, authorizing the State Board of Medical Examiners to issue certificates to graduates of osteopathic colleges and to others who pass examination, and authorizing the choice by the governor of an osteopath to become a member of the State Board of Health and State Board of Medical Examiners.

KENTUCKY.

Gift to Lexington Hospital.—James R. Keene has given $1000 to the Good Samaritan Hospital, Lexington.

Dr. Byrne Acquitted.—Dr. W. A. Byrne, Peak's Mill, Franklin County, was acquitted in the County Court, April 4, of the charge of violating the statutes regarding medical practice. Dr. J. N. MacCormack, of the State Board, concurred.

Louisville National Medical College held its fourteenth annual commencement, April 7. Degrees were conferred on a class of 7. The address to the graduating class was delivered by Augustus E. Wilson, and the alumni address by Dr. Pickett of the class of 1898.

Certificate Sufficient Qualification.—Dr. Joseph M. Mathews, president of the State Board of Health, and City Health Officer M. K. Allen have furnished the secretary of the sinking fund a certified copy of the list of physicians in Louisville who are qualified to practice medicine under the state law. Hereafter he will accept the certified copy of the list as prima facie evidence that the license should be issued and will issue the license to those on the list without the necessity of bringing the personal certificate to the sinking fund office.

Addition to Norton Infirmary.—An addition to the John N. Norton Memorial Infirmary, Louisville, has just been completed, which more than doubles its capacity, the new and commodious operating rooms in the new building giving facilities for surgical work equal to any institution in the Southwest. The old building which has done so much good work in the past twenty years is being renovated and new steam heating apparatus and electric light fixtures installed so that when completed the entire plant will be as modern as it is possible to make it. In opening the new infirmary the trustees have followed the example of like institutions in other cities and determined upon a reorganization, electing a medical and surgical staff, feeling the need of the constant supervision and advice of professional experts who are thus made responsible for the conduct of the house. It is emphasized, however, that the infirmary will continue to welcome any and every patient brought to its doors by a reputable physician, to be under his own particular care, without intrusion from any one, and there will be no interference on the part of the medical staff with the patient of any physician. The members of the medical staff are as follows: Surgery, Drs. A. M. Cartledge, W. O. Roberts, E. L. Pearce, James B. Bullitt, and Louis Frank; internal medicine: Drs. J. B. Marvin, John G. Cecil, F. W. Koehler, C. W. Kelly and F. C. Simpson; obstetrics and diseases of children: Drs. H. B. Ritter and Henry E. Tuley; ophthalmology: Drs. S. G. Dabney and A. O. Pfingst; dermatology: Drs. I. N. Bloom and H. H. Koehler; pathology: Dr. J. A. Flexner. In rearranging the building, the administrative portion has been removed to the first floor of the new addition, with an electric elevator leading to each floor; the operative rooms are located on the fourth floor with dressing rooms on each floor; a new drug room will be installed with added facilities for obstetric work. The institution has a private laundry plant with latest machinery and in every department is thoroughly up to date.

MARYLAND.

Medical Assistant Authorized.—The legislature has passed a bill allowing a medical assistant to the secretary of the State Board of Health.

Personal.—Dr. Louise Erich has been elected professor of orthopedics at the Woman's Medical College, Baltimore.—— Dr. Howard Bratton, Elkton, has been appointed health officer of Cecil County.

Alumni Address.—The address before the Alumni Association of the University of Maryland School of Medicine, May 2, will be delivered by the Hon. Joshua W. Hering, M.D. (class of 1855), state comptroller.

Infectious Hospital Suit.—As a result of the failure of the Baltimore city council to confirm the purchase of a site for the Infectious Diseases Hospital by the hospital commission, suit has been brought against the city by the owner of the land in dispute for $20,000.

The Union Protestant Infirmary, Baltimore, will be reopened in a few days. It is practically a new building. A large addition has been made, and the whole thoroughly modernized. Three houses north of the main building have been purchased for the use of the 30 nurses. There are now 100 beds. The operating room is on the fourth floor. One feature of this is a cabinet where salt solutions are kept at blood-heat for immediate use. In the children's ward the doorknobs are placed high so that a child can not reach them. The floor of this ward is of compressed cork, therefore always warm so that children may sit on it without catching cold, and falls are not felt as much as on plain wooden floors. Around the walls for 3½ feet is white tiling, one course of which has Mother Goose pictures in blue. Children are first received in a special department, where they are bathed and in all infectious cases the clothing is fumigated. There are also isolation rooms, one for delirious patients and a lounging room. All the doorknobs are of white glass and the painting white enamel. The lighting is by electricity. The private apartments on the second and third floors are furnished with iron bedsteads enameled in white and with birdseye maple furniture. Dr. J. S. Davis, Jr., is resident physician, and Drs. W. A. Fisher, George S. Drake and William M. Dabney are assistants.

NEBRASKA.

Creighton Feasts and Will Dance.—Creighton Medical Society, composed of undergraduates of Creighton Medical College, Omaha, held its annual banquet, April 16, and will give its first annual ball, April 23.

University Absorbs College.—As a result of an important meeting of the board of regents of the State University, April 9, Omaha requires a direct and local interest in the university. A contract was adopted which affiliates the Omaha Medical College with the university by virtually annexing it. The medical course will be four years—two of which are to be spent in the university at Lincoln and the remaining two years in the Omaha college. A university degree will be given.

NEW JERSEY.

Practicing at 93.—Dr. Otis R. Freeman, Freehold, although in his ninety-third years, is still in the active practice of medicine.

Woman's Hospital Bequest.—By the will of the late Justis B. Crandol, Seaville, $5000 is bequeathed to the Woman's Hospital, Philadelphia.

Dr. Lemuel G. Goode, Jersey City, who recently underwent an operation for the amputation of his leg, has recovered and taken up his practice.

Sanatorium for Tuberculosis.—Through the efforts of the governor, the legislature passed the bill appropriating $50,000 for the establishment of a state sanatorium for consumptives.

Oldest Alumnus of Princeton.—Dr. James Curtis Hepburn, Orange, a graduate of Princeton in 1843 and of the University of Pennsylvania Medical Department, 1836, celebrated his 87th birthday recently. He has spent 37 years as a medical missionary in China and Japan.

NEW YORK.

Suit Against Lunacy Examiners.—The wife of a wholesale liquor dealer, who was adjudged insane in 1898 and was subsequently discharged because a sheriff's jury declared that she was sane, has begun suit for $100,000 damages against Drs. Allen Fitch and Austin Flint, examiners, and Dr. O. J. Wilsey, superintendent of the Long Island Home at Amityville.

New York City.

Dr. William Aldren Turner, of London, was the guest of the New York Neurological Society at its meeting April 8. He presented an interesting paper entitled "An Experimental Study of the Reflexes in Total Transverse Lesions of the Spinal Cord."

City Aid for Private Charities.—The new Comptroller has announced a sweeping reform in the matter of aiding to support hospitals and other charitable institutions. The city now pays annually $2,750,000 to these institutions and in some instances nearly all of the income comes from the city. It is now proposed that the city shall contribute only as much to these institutions as they are able to obtain from private sources.

Abattoirs Declared a Nuisance.—A number of property holders and residents in the vicinity of the slaughter houses located near the East River and Forty-second street, many of them women, having become exasperated by the vile odors that make their life miserable in the summer, have organized themselves into the Citizens' Health Protective Association, and purpose to oust the abattoirs that have so long been a nuisance in this region.

Bellevue Out-Door Department to Close.—It is announced that the trustees of the city hospitals have decided to close, on June 1, that old and justly celebrated dispensary known as the "Bellevue Out-Door Poor." The trustees declare that they need this building for dormitories and that adequate provision for the patients is made at the nearby medical schools of Cornell and the New York University; but there are some who know the sharp rivalry between the medical schools who are disposed to think that Bellevue has been betrayed into the hands of these rivals.

Buffalo.

Ambulance for German Hospital.—The German Hospital has received a new and beautiful ambulance and is now prepared to answer emergency calls.

Correction.—Dr. Livingston L. Lewis, Hoboken, desires us to announce that it was not he, but Dr. Harry Lewis, North Bergen, who was married to Mrs. Gus Atkins of North Bergen, March 20.

Accommodation Inadequate.—In view of the fact that the children's wards and nurses' quarters have become inadequate at the Erie County Hospital, it is proposed to build a children's pavilion and to convert the children's ward for nurses' quarters.

Eddyites Agree to Report All Communicable Diseases.—The Health Commissioner has persuaded the local Eddyites to report all contagious diseases and to submit such cases to quarantine. By this treaty the Health Department gives much more recognition to the Eddyites than they deserve, for it practically licenses them as practitioners and therein lies the danger. As the Buffalo *News* says editorially, "they are good diplomats, these people who deny disease and get rid of every undesirable thing in life—and death—by simply explaining it away."

PENNSYLVANIA.

Dead-Beat List.—The Lawrence County Medical Society has determined to establish a "dead-beat" list and has appointed Dr. James M. Popp, New Castle, collector.

Joseph J. Kinyoun, M.D., Ph.D., late surgeon of the United States Marine-Hospital Service and director of the Hygienic Laboratory at Washington, has assumed the directorship of the biologic laboratories of the H. K. Mulford Company, Glenolden.

St. Francis Hospital, Pittsburg.—At the annual meeting of this hospital April 9, it was reported that 1628 patients had been cared for during the year; that the training school for nurses was giving excellent satisfaction and that the hospital was in prosperous condition.

Personal.—Dr. James L. Srodes, Wilkinsburg, moved to Woodville, April 1, to become the medical superintendent of the Allegheny County Home.——Dr. Cyrus B. King, Allegheny, has been appointed a member of the State Board of Charities.——Dr. C. E. Lockwood, Brackney, has purchased the practice of Dr. Frank I. Smith, Hallstead.——Drs. John Rourke and Robert E. Culler, internes at the Reading Hospital, have been re-appointed.——Dr. John W. Gordon, Belle Vernon, a member of the Fayette County pension board, has resigned; Dr. Jacob S. Hackney, Uniontown, succeeds him.——Dr. Thomas L. White, McKeesport, sailed for Europe, April 10.——Dr. Andrew H. Elliott, Emsworth, has been compelled to move to Colorado for his health.——Dr. Gustav T. Fox, Bath, has resumed practice after a prolonged vacation.

TENNESSEE.

The West Tennessee Medical and Surgical Association will hold its annual meeting at Jackson, May 22 and 23, under the presidency of Dr. Jere L. Crook, Jackson.

State Board of Health.—At the annual meeting of this body in Nashville, Dr. William J. McMurray, Nashville, was elected president and Dr. Heber Jones, Memphis, vice-president.

Funds for Erlanger Hospital.—The County Court, on April 8, appropriated $5000 for the support of Erlanger Hospital, Chattanooga, the expense to be borne equally by the city and county. The court also appropriated $7500 for an addition to the County Insane Asylum.

Faculty Changes.—University of Nashville Medical Department announces the following faculty changes: Dr. Alberto Hudson, from adjunct professor to professor of anatomy, vice Prof. Carl C. Warden, resigned; Dr. Samuel M. Bloomstein, professor of diseases of children; Dr. Holland M. Tigert, assistant to the chair of materia medica and therapeutics, vice Dr. Robert S. White, resigned; Dr. Adam G. Nichol, director of the surgical laboratory, and Dr. James Whitworth, first assistant demonstrator of anatomy and lecturer on regional anatomy.

Commencements.—The fifty-first annual commencement exercises of the Medical Department of the University of Nashville were held March 27. Chancellor James D. Porter presided and conferred degrees on a class of 34. Prof. Hill McAlister delivered the faculty address.——The Medical Department of the University of Tennessee, Nashville, held its graduating exercises, April 3, at which Col. J. B. Killebrew, representing Dr. Charles W. Dabney, conferred degrees on a class of 17. Dr. Robert O. Tucker delivered the charges to the graduating class, and Dr. Paul F. Eve, dean of the faculty, presented the diplomas.——Vanderbilt University Medical Department, Nashville, graduated a class of 16, April 3. Dr. N. Pendleton Dandridge, Cincinnati, delivered the address to the graduating class; Dr. W. Frank Glenn gave the faculty address, and Chancellor Kirkland conferred the degrees.

GENERAL.

Cholera Increases in Manila.—The Philippine Islands have had 663 cases of cholera reported thus far and 510 deaths. Of these, 245 cases and 192 deaths were in Manila.

Death of Dr. Meacham.—Dr. Franklin A. Meacham, major and surgeon, U. S. A., assistant to Major Maus, health commissioner of the Philippines, died, April 15, at Manila, from overwork in the cholera supervision.

Internes Wanted in New York Hospitals.—Students about to graduate who are unable to secure positions in general hospitals, or young physicians whose terms are about to expire in general hospitals and who wish to enlarge their experience, are now offered an opportunity to enter the New York State Hospitals as internes or clinical assistants. These positions provide lodging and board. Appointments are made for a year. Some 28 positions will be opened in the 14 hospitals situated in the following places in New York State: Utica, Ward's Island in New York City (two hospitals), Buffalo, Gowanda (homeopathic), Rochester, Binghamton, Ogdensburg, Kings Park, L .I., Poughkeepsie, Flatbush (Brooklyn), Willard, Central Islip, L. I., and Middletown (homeopathic). Although these are hospitals for the insane, yet they are so large that opportunities for experience in general medicine are abundant. Each hospital is well equipped, the field for study in general medicine is excellent and surgical operations of all kinds are frequently performed. Many students will be glad to learn that positions of this kind have been thrown open to them. It is believed that young physicians wishing hospital experience will profit by a year's residence in one of these hospitals, and such as desire to continue in special work would be eligible for appointments subsequently to salaried positions in the same service. No examinations will be necessary, but application must be made in person with good references, directly to the medical superintendent of any of the above named hospitals or to Dr. Frederick Peterson, President of the Commission in Lunacy, 4 West 50th St., New York City.

Measles Among Troops in Philippines.—The report of the chief surgeon, Division of the Philippines, dated Feb. 15, 1902, has been received at the surgeon general's office. The percentage of sick for the month of January 15 to February 15 was 6.39. The total number of cases reported was 2611 in a mean strength of 40,820 men. There were 230 cases of venereal diseases, 118 of wounds and injuries, 124 of malaria, 112 of dysentery, 69 of diarrhea and 25 of other intestinal diseases. The deaths numbered 54, as compared with 59 during the previous month. Two men were killed in action, 2 died of battle wounds, 2 of gunshot wounds not received in action, 14 of dysentery and 5 by drowning. Four hundred and twelve medical officers were on duty in the division during the month, with 2165 men belonging to the Hospital Corps, and 67 female nurses belonging to the Army Nurse Corps. Bubonic plague, to date, had not appeared among the troops, and only one case was reported for the month in the whole archipelago. This occurred on the person of a native woman, on February 9, in the walled city. She died soon after discovery. The inhabitants of the house were removed to the detention camp of the Board of Health, where they were inoculated with Kitasato's serum and Shiga's vaccine matter. To date no further cases had occurred. The board detailed for the investigation of Surra had not made a report, but it is understood that during their trip through Southern Luzon they found a great number of cases of the disease. The transport *Sheridan* brought measles to Manila on January 26. On February 5 the first case of this disease was developed. Notwithstanding careful isolation, disinfection and inspection, 22 other cases followed, all of which were isolated at the First Reserve Hospital. The troops, including the 27th Infantry, 11th cavalry and casuals were taken to Mariveles on the *Sheridan*, their clothing and everything which had been exposed were disinfected, and they returned on the *Relief* to Manila. The *Sheridan* was brought back to the city and unloaded; she was then turned over to the quarantine officer for thorough disinfection. The men of the 27th Infantry were put in a detention camp at Camp Wallace, the 11th Cavalry at Pasay, and the casuals at Santa Mesa. No further cases occurred except at the last-mentioned point, where several children who came on the *Sheridan* were attacked. Some of them are still in the city, and a few other children have been infected by them. The troops free from the disease have been released from the detention camp. The cases were of a mild type, as measles usually is in this climate.

Health and Sanitation in Manila.—The report of the Commissioner of Public Health, Major L. M. Maus, surgeon, U. S. Army, for the month of January, 1902, states that the deaths in Manila for the month were equal to an annual rate of 30.33 per thousand, as compared with 30.12 in January, 1901. It is to be observed, however, that the former rate was computed on a basis of 297,154 inhabitants, while the latter was calculated from a population of 250,000. Neither of these estimates of the population appears to be more than guesswork. Among the permanent residents of the city there were 765 deaths and 87 among the transients. The former list was made up of: Filipinos, 723; Chinese, 25; Americans, 3; U. S. Soldiers, 5; all others, 9. As usual, the greatest mortality was due to infantile convulsions, there having been 248 deaths from this cause alone. Other prominent causes were: Diarrhea and dysentery, 99; tuberculosis of the lungs, 44; non-puerperal eclampsia, 37; acute and chronic bronchitis, 47; beri-beri, 32; meningitis, 21; intermittent fever, 20; senile debility, 16. Not a case of smallpox, scarlet fever or diphtheria was reported during the month. The birth rate is stated as 14.59 per thousand, the absolute number having been 368. Until many radical sanitary defects and conditions are removed or remedied the mortality among the lower classes will remain larger than it should be. The principal improvements needed are: 1, the installation of a modern sewerage system; 2, the construction of filter beds and an increase in the city water supply; 3, walling and cleaning of the esteros, a number of which should be closed; 4, remodeling or removal of the majority of the old stone buildings in the city; 5, obliteration of the moat around the Walled City and removal of the wall; 6, raising the streets and city site; 7, repairing and widening the streets; 8, constructing a good system of gutters and subsoil drainage, and 9— but not least— providing suitable parks.

No plague occurred in the city during the month, the last case having been reported Dec. 24, 1901. During January, 1900, 18 cases occurred and in January of last year 4; but in May of that year there were 124 cases. Radical measures for the suppression of the disease are being enforced by the Board of Health, among which may be mentioned the cleaning out and disinfection of all houses in which plague cases have occurred or in which rats affected with the disease have been found; the destruction of rats by means of traps and poison; the immunization of the lower classes, among whom the disease usually occurs, by means of the Shiga vaccine; the thorough cleaning and disinfection of all the filthy habitations in the city and the prevention of overcrowding. Since September, 1901, 33,772 rats have been caught, of which number 30,786 were examined in the laboratory. Of this number 229, or 0.7 per cent., were found to be infected. During January, 1902, 16,776 were examined, 51 of which, or 0.3 per cent., were infected. It would appear from this that the disease among rats is gradually disappearing.

Boards of Health have been organized in nineteen of the provinces, and municipal boards are being established in many of the pueblos. These boards will prove of great benefit to the Philippines, not only in improving the sanitary condition of the natives, but in the suppression of smallpox and of epidemic diseases among domestic animals as well. All the presidents of provincial boards have been provided with the necessary instruments for immunizing cattle against rinderpest. From the Vaccine Institute in Manila there were issued during the month 109,075 units of vaccine virus to the various provinces for the use of the natives.

Smallpox.

Alabama: Several new cases of smallpox in mild form are reported near Larkinsville, Jackson County.

California: The report of the quarantine committee at Randsburg shows that 2 patients remain at the pesthouse; 71 male patients and 10 females have been under treatment at the isolation hospital, and 30 have been quarantined.——At Lewiston, five new cases are reported in one family.

Illinois: The Chicago Department of Health announces that of the 16 new cases of smallpox discovered and removed to the isolation hospital last week one was imported from Iowa and one from Springfield, Ill.; five others were cases contracted from exposure at Zion College, discovered March 26. At the close of the week 42 cases remained under treatment in the hospital, 10 had been discharged, recovered, and no death had occurred. Since January 1 there have been 128 cases treated, with one death and 84 recoveries.

Maryland: At the monthly meeting of the State Board of Health, April 9, eight cases were reported in the counties outside of Baltimore, viz.: 2 each in Wicomico, Caroline and Allegheny; 1 each in Talbot and Worcester, 8 in all. Since March 1, there have been altogether in these counties and in Somer-

set, Frederick and Howard 26 cases, of whom 2 have died.

Massachusetts: A short time ago Dr. Morse, of the State Board of Health, made the announcement that there had been 46 cases of smallpox in Gilbertville, and six in Ware during the last three months. This was doubted by the majority of the people, and even by some of the local physicians. Since that time two more cases have occurred which the patients' friends refused to believe to be smallpox. The board finally decided to get a specialist, and Dr. Thomas B. Shea of Boston was called in. He examined the patients carefully and pronounced the disease smallpox.

New York: Health Commissioner Lederle of New York City has asked the Board of Estimate and Apportionment for a bond issue of $1,025,000 to enable better provision to be made for smallpox cases in Greater New York. As an example of the inadequacy of the present arrangement, it is stated that cases of smallpox having developed in a remote portion of the Borough of Richmond, the diagnostician of the health department was forced to travel 40 miles; the ambulance sent for the patients went 36 miles; the boat for contagious diseases made a trip of 66 miles, and it was fifteen hours after the nature of the disease had been certified before the patients could be conveyed 33 miles to the nearest hospital. Evidently there are unusual difficulties attending the proper administration of the health department in this second "city of magnificent distances."

Ohio: Scio has 6 well-developed cases of the disease.——Shelby has had a return of the disease and seven houses are quarantined.

South Dakota: The commissioners of Lawrence County have passed a resolution making vaccination compulsory, hoping in that way to relieve the epidemic of smallpox that has been raging in the Black Hills. The Board of Health has recently fumigated all saloons in Deadwood, and strict quarantine regulations are being enforced. Under the resolution just adopted all persons who have not been vaccinated within the last year must submit to the operation. Those who have not the money to pay for it may have it done free of charge by the county physician.

Virginia: Smallpox still prevails to a greater or lesser extent in many of the counties. In some sections—counties contiguous to those in which the disease is reported—there are no reports, making it impossible for the secretary of the board, Dr. Paulus A. Irving, to definitely determine the actual conditions in the state. Alleghany county has 1 case; Augusta, 8; Bedford, 4; Botetourt, some; Floyd, several; Fluvanna, 60; Franklin, 50; Gloucester, 30; Isle of Wight, 1; Northampton, 1; Patrick, several; Pittsylvania, 40; Roanoke, 1; Rockbridge, 4; Wise, some, and Wythe, 12.

Canada: Halifax, N. S., has been declared free of smallpox.——Manitoba, which, after a long siege of smallpox, was nearly empty of patients, is again full. The disase has broken out afresh in different sections of the city and fears are entertained of an epidemic. It is stated that returning lumbermen from the camps which have broken up are the source of the infection. The medical health officer, Dr. Douglass, is putting forth strenuous efforts to hold the outbreak in check.——In 1901 there were 1879 cases throughout Ontario. In January, 1902, 629 cases were reported; in February, 707; in March, 302. The cases have therefore fallen off over fifty per cent. in the last month. The total number of cases reported during the past fifteen months amounted to 3517.——Official records show that the present outbreak of smallpox in the city of Quebec dates from October 28 last. Since that time there have been 671 cases, and the largest number of cases on the books of the health authorities at any one time was eighty-two. In that time there have been only eight deaths, so light has been the character of the disease. The assertion has been made by doctors and others in the city that there were several hundred cases of smallpox in the city, unknown to the health authorities, and that people were constantly exposing themselves to the disease in order to take it and thus avoid vaccination. This is owing to the mildness of the disease.

CANADA.

Dr. W. H. Drummond, Montreal, known as the "habitant" poet-doctor, is to receive distinct honor from Toronto University at its June convocation. On that occasion he will receive the degree of Doctor of Laws.

Vancouver Personal.—Dr. Robertson of Vancouver has sailed as ship's surgeon on the *Aorangi* and will make the round trip to Australia. The regularly appointed surgeon had arrived too late to accompany the steamer to Vancouver on its last voyage.

The Rhodes Scholarships are of the yearly value of £300 each and are tenable at any college in the University of Oxford for three successive academic years. Ontario will have three, Quebec three and Newfoundland three. It is expected that the other provinces of Canada will be provided for later by the executors.

St. John Medical Society.—After the regular meeting of this society on April 9, a complimentary dinner was given to Dr. Morris, one of its members, who has had charge of the smallpox outbreak at St. John, N. B. Mr. Ellis presided, and a very happy evening was spent by a large section of the medical fraternity of St. John.

The British Columbia Medical Society Council, once announced, is now amended. The result was so close that a recount was demanded, and Dr. Lefevre is declared elected in place of Dr. McKechnie of Nonaimo. The members are: For Victoria, J. C. Davie, O. M. Jones, C. J. Fagan (secretary); Vancouver, W. J. McGuigan, J. M. Lefevre; New Westminster, R. E. Walker; Kamloops, Arthur P. Proctor.

Canadian Association for the Prevention of Tuberculosis.—The annual meeting was held at Ottawa, April 17 and 18. An address by S. A. Knopf, M.D., New York, was entitled, "The Mission of Societies for the Prevention of Consumption in the Anti-Tuberculosis Crusade." The program covered all the avenues of effort in this important work and consisted largely of reports of committees of investigation with discussion of the same.

Changes at Toronto University.—The Senate of Toronto University has decided to separate the Board of Medical and Dental Studies. There will be hereafter three distinct boards, for medicine, dentistry and pharmacy. At the same meeting a statute amending the curriculum in medicine received its second reading. It provides that an examination and attendance in the fourth year will hereafter be necessary in ophthalmology, otology, laryngology and rhinology.

New Wing for Hotel Dieu Hospital, Montreal.—The Sisters of the Hotel Dieu, in charge of the Hotel Dieu Hospital, Montreal, have decided upon the erection of a large wing to the present hospital. The new wing will contain a new operating room and two special rooms for the use of the *x*-ray. The remainder of the wing will be divided up into private wards for which there has been a great demand recently. The addition will be greatly to the advantage of the medical students of Laval University.

Closing Exercises at Queen's University.—Queen's medical convocation ceremonies took place on the afternoon of April 8. Dr. Herald, the secretary, reported that the attendance at the medical department during the session just closed was 177, the largest in the history of that faculty of the University. G. F. Dalton, Kingston, was medallist in surgery; F. E. Mellow, medallist in medicine; house surgeons for the Kingston General Hospital for next year are: G. F. Dalton, C. Destremy and F. Etherington.

Insanity Increasing in Montreal.—Mayor Cochrane of Montreal states that he is shocked at the number of persons he daily has to commit to the insane asylum. He commits on the average two patients per day. Persons committed by the corporation have to be supported in the institutions by the corporation; and owing to the large numbers the mayor is of the opinion that these are sent in to the city from outside points to friends and are thus foisted on the charity of the city. He will cause the city council to make an enquiry into the matter.

Right of City to Send Smallpox Patients to Hospital.—Owing to the fact that some persons affected with smallpox in Montreal refused to go to the city hospital, one individual going so far as to say that he would split open the head of any doctor or officer who entered his house for the purpose of removing him, the Hygienic Committee has asked that the city attorneys make a report to council on the right of the city to compel patients suffering from infectious diseases to go to the civic hospital. The report will no doubt be awaited with interest.

Ontario Board of Health.—The regular quarterly meeting of the Ontario Board of Health was held in Toronto during the past week. Dr. Bryce, the secretary, presented an interesting report on the smallpox outbreak, which is summarized in another column. Dr. Bryce also presented an extensive report on the mortality returns, claiming that there was altogether too much "heart failure" set down as the cause of death. On this report an interesting discussion arose as regards the duties and responsibilities of coroners, it being held that the

law should be amended so that these officers should not be required to make affidavits that there were no evidences of foul play before they had actually made a thorough investigation. Ontario, with 2500 doctors, has over 500 coroners.

Canada Has Immigration Problems.—Owing to the increased surveillance at the border by American officials, about 100 foreigners desiring admission to the United States are refused each week. Mr. Robert Watchorn, special immigration inspector of the United States in Canada, has startled the dominion by the statement that 98 per cent. of these immigrants are suffering from serious and most infectious diseases. The two chief diseases mentioned are trachoma and favus. Mr. Watchorn calls the attention of Canada to the fact that these persons largely remain in Canada. The statistics show what a nice measure the United States took when the tide of emigration, checked at the seaports, turned to the unprotected Canadian border for an unhindered entrance. Parliament will doubtless make a speedy investigation. It is interesting in this connection to note Canada's active immigration propaganda. Mr. R. W. Hilliard, the Canadian traveling immigration agent, reports that he learns that about 75,000 people from the Northern and Western States are contemplating removing to the Canadian Northwest. The continual loss that the United States suffers in this way is largely of healthy, desirable farmers, and is of moment to the states affected, as well as to those physicians whose practices are lessened by it. However, one valuable feature is that it binds Canada and the United States by one of the firmest of ties.

FOREIGN.

The Barcelona Academy of Medical Sciences offers a prize of 2500 pesetas for the best work in Italian, French, Portuguese or Spanish on "Comparative Histology of the Fovea Centralis," received before December 31.

Grecian Medical Congress.—The second Pan-Hellenic Medical Congress will convene at Athens May 17 to 21, 1903. Paludism in its various aspects will be one of the subjects chiefly discussed, especially in its relations to pregnancy and malignant disease.

International Congress of Electrotherapy and Radiography.—The first congress was held at Paris in 1900. The second will convene at Berne, Sept. 1 to 6, 1902. Communications should be send to the secretary, Dr. Schnyder, Bundesgasse 38, Berne, before July 15. The fee is 25 francs.

Literary Property in the Medical Press.—The report to be presented by the committee to start the discussion of this subject at the International Conference of Delegates from the Medical Press at Monaco, April 7, was based on the following principles: "1. Original articles, lectures and, in general, all solid articles have unquestionably the rights of private property. They should not be reproduced nor translated without indication of the original source and even this should not be done without the authorization of the journal. Abstracts can be made of these articles without authorization, provided that the original source is duly credited. However, if the abstract only refers to a limited portion or point of the subject treated, the name of the author alone may be sufficient. 2. Other articles, transactions of societies and congresses, abstracts or reviews of articles already published, scientific letters, professional interests, etc., may be reproduced or translated without authorization, under the express condition that the periodical from which they are taken is indicated, and also the original source of the abstracts. 3. The reproduction of news, medical items, "varia," and all other items of this nature, is absolutely free." The committee added that they hoped the discussion would be based on these principles. They presented these rather strict regulations in order that the matter might be discussed along the lines and principles accepted by the periodical press of all the countries in the Postal Union.

The Fourteenth International Medical Congress will be opened in Madrid, Spain, April 23, 1903, and close April 30. Dr. Abraham Jacobi, having been requested by the officers of the Congress to form the American committee, has arranged that the plan devised by Dr. William Osler, which worked so well in preparation for the thirteenth congress, shall be followed also for the fourteenth. Invitations to accept places on the committee have therefore been sent to the presidents of the American Medical Association, American Congress of Physicians and Surgeons, and of the fourteen constituent societies and associations of the American Congress, the Surgeons-General of the Army, Navy and Marine-Hospital Service, the President of the Canadian Medical Association and the President of the National Dental Association. Acceptances have been received from nearly all of those invited. Dr. Howard A. Kelly of Johns Hopkins University will deliver the address at one of the general meetings of the Congress. He has chosen for his subject "The Passing of a Specialty." Dr. Ramon Guiteras has been appointed delegate to the Congress by the New York Academy of Medicine. The committee to date consists of W. W. Keen, M.D., Philadelphia, President of the American Congress of Physicians and Surgeons; John C. Wyeth, M.D., New York, President of the American Medical Association; R. H. Chittenden, M.D., New Haven, President of the American Physiological Society; Walter S. Christopher, M.D., Chicago, President of the American Pediatric Society; Joseph Collins, M.D., New York, President of the American Neurological Association; John W. Farlow, M.D., Boston, President of the American Laryngological Association; Samuel A. Fisk, M.D., of Denver, President of the American Climatological Association; S. C. Gordon, M.D., Portland, Me., President of the American Gynecological Society; Geo. T. Jackson, M.D., New York, President of the American Dermatological Association; Horace G. Miller, M.D., Providence, President of the American Otological Society; Presley M. Rixey, M.D., Washington, Surgeon-General of the Navy; F. J. Shepherd, M.D., Montreal, President of the Canadian Medical Association; George M. Sternberg, M.D., Washington, Surgeon-General of the Army; O. F. Wadsworth, M.D., Boston, President of the American Ophthalmological Society; DeForest Willard, M.D., Philadelphia, President of the American Surgical Association; H. August Wilson, M.D., Philadelphia, President of the American Orthopedic Association; James C. Wilson, M.D., Philadelphia, President of the Association of American Physicians; Walter Wyman, M.D., Washington, Surgeon-General of the Marine-Hospital Service; Abraham Jacobi, M.D., New York, chairman. The secretary of the American committee is John H. Huddleston, M.D., 126 West 85th St., New York City.

LONDON LETTER.

The Smallpox Epidemic.

The number of cases of smallpox in the metropolitan hospitals at the end of last week was 1567 against 1309, 1508 and 1542 in the three preceding weeks; 449 new cases were admitted during the week against 369, 554 and 450 in the three preceding weeks. The total number of cases since the commencement of the epidemic is 5267. Of these 3246 have been discharged cured and 750 have died. From extra-metropolitan districts, 574 cases have been admitted to the metropolitan hospitals. The incidence of the disease in London has now been 1 in 870 persons. The daily admissions show that the disease is still progressing. The average daily admissions in January were rather less than 42, in February just over 56, and in March, up to the 20th, 70 a day.

The number of patients in hospitals this week is 1526, against 1508, 1542 and 1567 in the three preceding weeks; 389 new cases were admitted during the week against 554, 450 and 449 in the three preceding weeks.

Vaccination. Government Control of Lymph.

At the annual meeting of the Hospital Saturday Fund (an institution which collects money for the metropolitan hospitals on a certain Saturday every year, and last year collected $100,000) Dr. T. D. Acland made an important statement based on his seven years' experience as medical officer to the Royal Commission on Vaccination. More than 6,500,000 vaccinations were brought under the notice of the commission and in these serious injury occurred in one case in 14,159 primary vaccinations. But more than half of these were due to preventable causes, namely, the various kinds of inflammation. Having given facts and statistics to show the protective power of vaccination against smallpox he advocated arrangements by the government for an adequate supply of lymph of the best quality. A motion was carried that "The government should establish a laboratory fitted in the most perfect manner, adequate to supply all practitioners throughout the United Kingdom with vaccine lymph; and that they should inspect all establishments for the preparation of lymph in this country and regulate the sale of all that is imported."

Paralysis of the Cervical Sympathetic from a Bullet Wound.

At the Clinical Society Dr. J. Purves Stewart exhibited the following case: The patient was a soldier, aged 26, who had been wounded 14 months previously by a Mauser bullet, which entered the left side of the neck 1½ inches below the mastoid process and came out in the seventh right intercostal space in the posterior axillary line. The bullet thus passed in front

of the vertebral column. He had temporary total paralysis of the right arm, which gradually cleared up. There was some hemoptysis and slight dysphagia for a few days. Ever since the injury the sight in the right eye had been less acute than in the left, and he had noticed that he did not sweat on the right side of the face, scalp, neck or upper limb. As regards the present condition, there were slight weaknesses of the small muscles of the right hand, and an area of slight analgesia along the inner border of the upper arm, forearm and hand, including one and a half fingers, with a small patch in the axilla. The right pupil was smaller than the left, and did not dilate when shaded. Both pupils reacted briskly to light and on convergence. The cilio-spinal reflex was absent on the right side. The right palpebral fissure was narrower than the left, and the right eye was slightly sunken. He did not sweat on the right side of the face, scalp, neck, upper part of the thorax, or upper extremity. This area of anidrosis was bounded by the middle line and extended down as far as the third rib in front and posteriorly as far as the middle of the scapula. The lesion was apparently one of the first dorsal nerve-root on the right side, involving the cervical sympathetic.

The Increase of Cancer.

It is an observation in all civilized countries that cancer has greatly increased in the last generation. The subject has been repeatedly discussed in England. An attempt was made, but not successfully, to show that the increase is only apparent, and that the increased number of deaths from cancer registered are the result of more accurate diagnosis in the present day. Two very important papers have just been read on the subject at the Chelsea Clinical Society. Dr. J. Tatham, superintendent of statistics at the General Register office, said that during the last four years the annual number of deaths from cancer (using the term for all forms of malignant diseases) in England and Wales has averaged more than 25,000. According to the latest returns the male death-rate from cancer in England and Wales is 672 per 1,000,000 living, while female death rate is not less than 975 per 1,000,000. This excess was due to the tendency of malignant diseases to attack the generative organs of the female more than those of the male. When the deaths from cancerous affections of ovaries, uterus and breast were substracted from the total cancer deaths of females, the remainder gives a death rate among females which is considerably below that among males. Thus, in the four years, 1897-1900, the male deaths from cancer, less the deaths from disease of the organs referred to, corresponded to a death rate of 645 per 1,000,000, while the female rate with the same limitations did not exceed 568 per 1,000,000. The official figures show the appalling fact that the cancer death rate is more than double what it was 30 years ago. In the decade, 1861-1870, the average annual death rate from cancer per million living was 242 in males and 519 in females; in the decade, 1891 to 1900, the rates were respectively 597 and 903. Thus, although at present women suffer much more severely than men from malignant disease, nevertheless the disease during the last 30 years had increased among men much more rapidly than among women. Sir William Banks, the eminent Liverpool surgeon, said that he was absolutely certain that cancer now appears at a much earlier period of life than formerly. In discussing the cause of cancer he referred to the fact of its prevalence near rivers that periodically overflowed their banks and low damp situations, especially those with a clay soil. The parts where there is the least cancer are the high situations, especially those with a chalk formation. He thought that the great increase of the disease was due to the great amount of food, especially meat, consumed now by the people. There was no longer a class such as existed 50 years ago who ate meat only once a week. Wretched, half-starved patients were not the most prone to cancer, but well-nourished persons with plenty of fat and often with the color of health in their cheeks. However, this view, which has been advocated before, has been confuted. Dr. Reiche of Hamburg has shown that the increase of cancer in Hamburg in the last 30 years occurred equally in the poor and ill-fed part of the town and in the rich and prosperous. A much more plausible cause for the increase of cancer is that given by Mr. Jonathan Hutchinson, i. e., increase of longevity.

The Medical Graduates' College and Polyclinic.

At the third annual general meeting, the annual report records a gratifying and steady increase in all departments, showing the polyclinic filled a real and long-felt want. The attendances at the practical classes have been considerably augmented and on one or two occasions the entries have been so numerous that a duplication of the courses was necessitated. The register shows the total number of life members, members, subscribers and temporary subscribers to be for the year 1901 825, against 615 for 1899 and 674 for 1900. The special committees formed for dealing with leprosy, yaws, climatology and tuberculosis have held several meetings, and two new special committees for the study of cancer and vaccination are in course of formation. The short courses on special subjects, which were inaugurated in October, 1900, have proved so attractive that their number during the past year has been doubled. The work of the consultation is steadily increasing, and it was pointed out that a great many more members availed themselves of its opportunities than formerly. In the past year 150 clinical investigations have been carried out in the laboratory. The museum has been enriched during the year by many valuable additions. The net profit that accrued to the college funds as a result of the dinner held at the Hotel Cecil on May 22 last was £1163.

Correspondence.

Reprints, Whence They Come and Whither They Should Go.

DENVER, COLO., March 28, 1902.

To the Editor:—There is an inborn craving in the hearts of medical men for reprints of their articles. The explanation of this universal phenomenon is based on a psychological fact, namely, that every writer wishes to give the stamp of individuality to his work. An article in a modern periodical is like a pin in a stack of hay. That an article nowadays may make a lasting impression upon the reader, it must be an extraordinary production, indeed. The individuality and force of the majority of writings is obliterated in the "crowd." Hence, the writer unconsciously makes an attempt to rescue his production from oblivion by giving it at least the form of individuality. A reprint is an entity, a whole, not a part of a conglomerate.

There is, besides, a utilitarian reason for the existence of the reprint. It is a time-saving contrivance, since it is easier to handle and, therefore, more serviceable for purposes of reference. Especially is it true in the case of long articles running through several numbers of a periodical. By using a reprint one avoids the annoyance of hunting for continuations through a maze of irrelevant literature.

The reprint, furthermore, possesses an altruistic element, namely, the socialization of ideas. By sending out reprints, one is enabled to call the attention of his colleagues to some new idea, to some particular point. By individualizing and bringing one's work into bolder relief the writer may have the satisfaction of seeing his ideas either accepted or justly refuted. The reprint then becomes a source of mutual benefit.

In the majority of cases, however, the sending out of reprints instead of being a mutual benefit, is nothing but a mutual fraud. They are sent out, not with a view of being read and preserved by the recipient, but simply as a hollow courtesy, which *faire des compliments* is reciprocated in the same spirit. Of one thousand reprints sent out, one will not be far from the mark in saying that not fifty will be read, and not a dozen will be preserved for future reference.

Any one who doubts the above assertion should make the following experiment: Ask of all of those to whom you sent out your reprints, say, six months ago, to return you a copy. You will soon be convinced that your reprints, the writing, printing and mailing of which cost you labor and money, have all gone the way of the daily newspaper.

The fun of the matter is that you have no right to grumble or to be indignant at your fellow-man, for you, too, have been the happy recipient during the last six months of many reprints, to whose authors (after having deposited their missives into the waste basket) you have probably addressed a courteous note, thanking them for their "valuable contributions." How many have *you* read? How many have *you* preserved?

This exchange of compliments is downright mockery and self-deception. The present system of sending out reprints promiscuously is a failure. A radical change is imperative.

SEND YOUR REPRINTS TO THOSE WHO WILL READ THEM.

If any one is more liable to read your reprints than another it is he who himself has contributed to the subject treated in your article. Look over several volumes of the periodical and find out the names of authors who have written already on the subject, and send them your reprint. They will undoubtedly read it, possibly preserve it.

If you wish to awaken an interest in your subject in such whom you do not know, mark with a blue pencil the most salient points in your reprint, and write on the title page "Pages so and so marked." This will insure a glance at least, perhaps a perusal.

SEND YOUR REPRINTS TO MEDICAL LIBRARIES.

A medical library is the only place where your reprint will certainly go to the shelf instead of to the basket. There your reprint will be smoothed out, catalogued under your name and under the name of the subject you treat of, be bound and eventually read with profit. If you have contributed anything of value, be sure sooner or later your work will be read by a colleague unknown to you, perhaps thousands of miles away from you. Many ideas ripen and become digestible under the dust of book shelves. In years to come, when you have already forgotten your own work, you may have the satisfaction of seeing yourself quoted or referred to. Your friends may have sent your reprints to the paper mill, or burned them in a fit of "cleaning up rubbish"; nay, your own copies may have disappeared from the face of the earth, yet your reprints still live. By sending them to libraries you have secured for them a home where they will be tenderly cared for and preserved for all time.

Let the medical libraries be the first claimants upon your reprints. We live in the work we leave behind us. By placing our reprints in medical libraries we are reaching out for immortality.

C. D. SPIVAK, M.D.,
Sec. Colorado Medical Library Association, Editor of *Medical Libraries.*

State Boards of Registration.

Pennsylvania Examiners.—At the examination in December by the Pennsylvania State Medical Boards, there were 105 applicants for certificates before the Regular Board, 21 failing to pass; 9 applicants before the Homeopathic Board, 4 failing to pass.

New York State Examination.—The New York State Board of Medical Examiners held an examination at Albany, in January. The number of subjects examined in were 7; percentage required, 75. The total number of applicants was 113, of whom 79 passed.

Montana Osteopaths.—The state board of osteopathic examiners elected the following officers on March 5: Dr. Asa Willard, Dillon, president; Dr. C. W. Mahaffy, Helena, secretary, and Dr. O. B. Prickett, Billings, treasurer. Of 26 applicants examined during the year, all have passed.

Missouri Examination.—At Jefferson City, January 7, the Missouri State Board of Health examined 31 candidates, of whom 14 passed and 17 failed. The written examination covered 11 subjects with 110 questions, the percentage necessary to pass being 75. The successful regular candidates were graduates of the following schools; University of Basel, Germany; University of Berlin, Germany; Imperial University, Austria; Johns Hopkins, Baltimore, Md.; Marion-Sims, St. Louis; Marion-Sims-Beaumont, St. Louis (three); Denver Medical College, Colorado; Miami Medical College, Cincinnati; American Medical College, St. Louis (two); University of Pennsylvania. There was one member of the Homeopathic school licensed, a graduate of Hahnemann Medical College, Chicago. The board objects to furnishing the percentages attained by applicants and the data concerning those who failed.

Examinations in Many States.—The spring meetings of examining boards have been in session in many states during the past few weeks.——The Montana Board, at Helena, April 3, granted licenses to 13 out of 20 applicants. Dr. F. W. McCrimmon, Butte, was elected president; Dr. William C. Riddell, secretary, and Dr. George H. Barbour, treasurer. The next session is in October.——Twenty-one candidates were examined by the Minnesota Board at St. Paul, March 31, April 1 and 2.——Wisconsin candidates numbered about 20 at Milwaukee, April 7 to 9.——About 100 applicants met the Missouri Board of Health at Kansas City, April 2.——Iowa aspirants were examined, April 3-5, at Iowa City.——The Indiana State Board met at the capitol, April 10.——Tennessee examiners divided their forces, according to law, and examined candidates in Nashville, Knoxville and Memphis, April 3. Under the law as it now stands graduates of Tennessee colleges are entitled to license without examination, but next year's and succeeding graduates must be examined.——In Pennsylvania the next examination will be June 25 to 28, at Pittsburg and Harrisburg. The board met, April 2, at Pittsburg and elected these officers: President, Henry Beates, Jr., Philadelphia; secretary, H. S. McConnell, New Brighton.——The Illinois Board examined 137 candidates at Chicago, April 9-11, of whom 98 desired license as physicians, 28 as osteopaths, and 11 as midwives.

Results in Maine Examination.—At Portland, March 18, the Maine Board of Registration in Medicine examined 6 applicants and passed 4, there being 7 subjects with 70 questions, part oral and part written. The percentage necessary to pass was 75.

PASSED.

Candidate.	Sch. of Pract.	College.	Year Grad.	Percent.
446*	R.	Long Island College Hospital	1892	82
455	R.	Harvard Medical School	1901	76 3-7
456	R.	Dartmouth Medical School	1902	80 3-7
457	R.	Eclectic Medical College of Penn	1868	87

FAILED.

444*	R.	Northwestern University, Chicago	1892	60
454	E.	Eclectic Medical College of Maine	1884	66 2-7

* Had failed November, 1901.

Illinois State Examination.—The Illinois State Board of Health held its regular quarterly examination on January 16, at Chicago. The number of subjects examined in was 11; questions, 110. The total number of applicants was 39, of whom 36 passed.

PASSED.

Candidate.	Sch. of Pract.	College.	Year Grad.	Percent.
940	R.	Rush Medical College, Chicago	1901	91
946	R.	Rush Medical College, Chicago	1901	84
949	R.	Rush Medical College, Chicago	1901	88
959	R.	Rush Medical College, Chicago	1901	87
948	R.	Rush Medical College, Chicago	1902	85
968	R.	Rush Medical College, Chicago	1902	91
964	R.	Rush Medical College, Chicago	1902	82
941	R.	Rush Medical College, Chicago	1901	88
977	R.	College of Phys. and Surg., Chicago	1898	86
975	R.	College of Phys. and Surg., Chicago	1901	84
971	R.	College of Phys. and Surg., Chicago	1901	82
970	H.	Hahnemann M. C. and Hosp., Chicago	1901	78
973	H.	Hahnemann M. C. and Hosp., Chicago	1901	86
967	H.	Hahnemann M. C. and Hosp., Chicago	1902	92
933	H.	Hahnemann M. C. and Hosp., Chicago	1900	76
969	H.	Chicago Homeo. Medical College	1901	85
956	H.	Chicago Homeo. Medical College	1896	86
965	H.	Chicago Homeo. Medical College	1901	88
966	R.	Illinois Medical College, Chicago	1901	84
961	E.	Bennett Coll. of Eclectic M. and S.	1901	80
958	H.	Dunham Medical College, Chicago	1901	78
950	R.	American Med. Miss. College, Chicago	1900	85
953	R.	Columbus Medical College	1880	77
952	E.	Eclectic Medical Institute, Cincinnati	1899	84
938	R.	Cleveland Medical College	1896	83
931	R.	John A. Creighton Med. School, Omaha	1896	79
936	R.	McGill University, Quebec	1893	86
976	R.	Kentucky University, Louisville	1901	87
960	R.	Marion-Sims Coll. of Med., St. Louis	1901	82
947	R.	St. Louis Medical College	1897	82
944	R.	University of Parma, Parma, Italy	1899	83
955	R.	St. Louis and Missouri Med. Coll.	1900	82
944	R.	University of Parma, Italy	1899	83
945	R.	Baltimore Univ. School of Medicine	1894	76
963	R.	Meharry Medical College, Nashville	1901	86
979	R.	Keokuk Med. Coll., Coll. of P. & S.	1901	86
957	H.	New York Homeo. Med. College and Hosp., New York City	1891	77

FAILED.

....	..	Name of college refused by board	1884	66
....	..	Name of college refused by board	1899	67
....	..	Name of college refused by board	1900	54

Virginia Examination.—On Dec. 16-19, 1901, the Medical Examining Board of Virginia met at Richmond and examined 94 candidates, of whom 53 passed, 12 failed and 29 took only a

partial examination. There were 10 subjects and 63 questions. The next session will be June 16 to 19.

PASSED.

Candidate.	Sch. of Pract.	College.	Year Grad.	Per-cent.
....	R.	University College of Medicine	1901	77
....	R.	University College of Medicine	1901	77
....	R.	University College of Medicine	1901	75
....	R.	University College of Medicine	1901	75
....	R.	University College of Medicine	1901	78
....	R.	University College of Medicine	1901	78
....	R.	University College of Medicine	1901	78
....	R.	University College of Medicine	1901	83
....	R.	University College of Medicine	1901	77
....	R.	University College of Medicine	1901	81
....	R.	University College of Medicine	1901	77
....	R.	University College of Medicine	1901	77
....	R.	Medical College of Virginia	1901	75
....	R.	Medical College of Virginia	1901	77
....	R.	Medical College of Virginia	1901	76
....	R.	Medical College of Virginia	1899	75
....	R.	Medical College of Virginia	1901	78
....	R.	Medical College of Virginia	1901	76
....	R.	Medical College of Virginia	1901	77
....	R.	Medical College of Virginia	1901	77
....	R.	University College of Medicine	1901	78
....	R.	University College of Medicine	1901	80
....	R.	University of Virginia	1901	78
....	R.	University of Virginia	1901	76
....	R.	University of Virginia	1901	88
....	R.	University of Virginia	1901	88
....	R.	University of Virginia	1901	83
....	R.	University of Virginia	1899	87
....	R.	University of Maryland	1901	75
....	R.	University of Maryland	1877*	
....	R.	University of Maryland	1900	77
....	R.	University of the South	1901	76
....	R.	University of the South	1901	77
....	R.	University of the South	1901	76
....	R.	University of the South	1901	75
....	R.	University of the South	1901	80
....	R.	University of the South	1901	75
....	R.	University of the South	1901	75
....	R.	Jefferson Medical College	1901	76
....	R.	Jefferson Medical College	1901	77
....	R.	Jefferson Medical College	1901	86
....	R.	Johns Hopkins	1900	89
....	R.	College of Phys. and Surg., Georgia	1901	75
....	R.	Baltimore Medical College	1898	78
....	R.	University of Baltimore	1899	75
....	R.	Howard Medical College, D. C.	1901	75
....	R.	Howard Medical College, D. C.	1900	84
....	R.	Harvard University	1901	83
....	R.	Howard University	1901	77
....	R.	Leonard Medical College	1901	78
....	R.	University of Pennsylvania	1898	75
....	R.	University of Pennsylvania	1901	80
....	..	College Unknown	*	

FAILED.

15	R.	Medical College of Ohio	1890	62
17	R.	Howard University	1901	73
23	R.	Medical College of Virginia	1901	71
35	R.	Leonard Medical College	1901	72
80	R.	Leonard Medical College	1901	73
38	R.	University of Virginia	1901	63
47	R.	University of the South	1901	73
49	R.	Howard Medical College	1882	16
63	R.	Louisville Medical College	1890	34
65	R.	Baltimore University	1898	57
92	R.	Vanderbilt University	1896	58
93	R.	University of Georgia	1900	69

* Oral examination.

Book Notices.

ALCOHOLISM, A Study in Heredity. By G. Archdall Reid, M.B., C.M., F.R.S.E., Author of "The Present Evolution of Man." Cloth. Pp. 293. Price, $2.50. New York: Wm. Wood & Co. 1901.

Dr. Archdall Reid is the champion, we might say, of certain extreme views. It is perhaps not unfair to say that he believes that drunkenness exalteth the nation by weeding out its defectives. The present work is an argument to this effect drawn out at length. Many of his alleged facts are open to dispute and his deductions are still more disputable. The inference that the Northern races have not become immune to alcoholism, while the Southern Europeans have become resistant from long usage and, therefore, temperate, seems unsupported. In fact, the Northern Europeans, the Scandinavians, British, etc., have in all times been drinkers and on the other hand temperance as such is not universal among the Southern Slavs nor even in the so-called Latin race. His statements as regards the effects of prohibition are the commonly repeated ones of the anti-temperance advocates in this country and one does not need to be fanatical to have to admit that they are not absolutely based on facts. Prohibition does prohibit to a marked extent in rural districts, but in the large towns it has been more or less a failure. It certainly makes a difference, however, in the community and in the State to have prohibition laws on the statute books. His absolute acceptance of the "for revenue only" findings of the British opium commission in India is also striking. For positiveness of statement and general contempt for all who disagree with him we think Dr. Reid has hardly a rival among medical writers, and he utterly ignores a very large and respectable class of biologists and naturalists whose theories are opposed to his own as well as many illustrious medical authorities. The fact of the evil heredity of parental drunkenness is probably as well demonstrated as any medical fact existing, yet he will not admit it. He seems to entirely ignore the statistics in regard to this point of those who have studied the defective classes, especially in France. We would assume from the internal evidence that Archdall Reid is probably the chief author of the report of the Committee on the heredity of inebriety which is published in the appendix. The acknowledgment that the committee adopted the researches of Dr. Reid on national peculiarities and did not itself make any investigation of the subject, we think bears out our opinion. The book is a readable one and will have its place in the literature of inebriety and anti-temperance reform.

PRINCIPLES AND PRACTICE OF OPERATIVE DENTISTRY. By John Sayre Marshall, M.D. (Syr. Univ.), Dental Surgeon, U. S. A. Cloth. Pp. 635. Price, $5.00. Philadelphia and London: J. B. Lippincott Co. 1901.

The author has shown decided skill in classification and arrangement of the topics discussed in the various chapters. The departments are arranged in a progressive, comprehensive style. Methods of constructing artificial crowns and bridge-work, orthodontia and other similar subjects that do not properly come under the head of operative dentistry have been eliminated. Those considered as pertaining to operative dentistry, such as dental embryology histology, bacteriology, anatomy and pathology, are handled in a masterly manner.

No one can write a work on science at the present time which would be entirely original. This is particularly true of operative dentistry. The present methods of operating are the evolution of sixty years of practice. Operative dentistry, however, does not admit of a wide range of development. The compilation and arrangement are well done. Unlike many dental authors, Dr. Marshall has given credit to those from whom he has obtained material. He has discussed many subjects that are very important to the dentist outside of filling teeth. General and special pathology are lacking in dental schools; hence, this new departure will have a beneficial influence.

Fine photomicrographs by Dr. Vida A. Latham illustrate the chapters on origin, development and histology of the dental tissue; bacteriology of the mouth; dental caries; diseases and injuries of the dental pulp, and render the work equally interesting to student and practitioner. New illustrations by Drs. Andrews, Miller, Williams, Cryer, Noyes, Vincentine, James S. Shearer, together with originality in text, place this work in advance of other text-books on the subject. It is admirably adapted to both student and the busy practitioner, because nearly everything pertaining to the various subjects is found up-to date.

MORPHINISM AND NARCOMANIA from Opium, Cocain, Ether, Chloral, Chloroform, and Other Narcotic Drugs; Also the Etiology, Treatment, and Medicolegal Relations. By T. D. Crothers, M. L., Superintendent of Walnut Lodge Hospital, Conn. Handsome 12mo of 351 pages. Cloth. Price, $2.00 net. Philadelphia and London: W. B. Saunders & Co. 1902.

This work is, as the author states, a practical summary of clinical experience of over one-quarter of a century in active treatment and care of narcomaniacs and as such it has a very decided value. The scarcity of literature also on the subject is mentioned by the author in the preface, as comparatively few text-books or treatises give the subject full consideration. It is therefore a valuable addition to the medical literature and the reader will find in it a large amount of well-described facts and suggestions. The author's views on inebriety of all kinds as a disease are well known. It is not necessary, of course, to agree with him in every point, but most of us, if not all, will be better for the information he can give. We would have been glad to have had him state, for example, the average daily amount of morphin consumed by

the ordinary morphin fiend, but we do not see it given in the work, nor the average amount given by different methods. Such a fact would be of value in estimating the number of such cases in a district where the sales are reported, as some alarming statistics have been sent out comparatively recently on this subject. We do not believe that morphin-taking is so widespread a habit as some claim, though it is far too common in every civilized country. The work is neatly printed and in the concluding chapters are given some well-known facts in regard to other drug addictions, such as chloroform, coffee and tea inebriates. The latest details in regard to the effects of methyl alcohol on the eye are not given, which seems to have been an oversight, but the data are so comparatively recent that the omission may be excusable.

THE ROENTGEN RAYS IN MEDICAL WORK. By David Walsh, M.D. Edin., Physician Western Skin Hospital, London, W. Part I—Apparatus and Methods. Rewritten by Lewis Jones, M.D., Cantab., F.R.C.P., Medical Officer in Charge of Electrical Department of St. Bartholomew's Hospital. Part II—Medical and Surgical. Third Edition. Cloth. Pp. 316. Price, $2.50. New York: Wm. Wood & Co. 1902.

Since the discovery of the Roentgen rays a new specialty accessory to medicine has arisen. While not every physician can master all the facts and details required for a thorough knowledge of the subject, the practical features of skiascopy so far as they relate to medicine and surgery are particularly well summarized in the present volume. The fact that it has gone through two editions is sufficient evidence of its having met a need. Recent as this publication is, it is necessarily a little behind the time in such a progressive specialty as this department of electric science. A number of recent publications have appeared which contain facts that might well have been included, but on the whole we know of no better book as a compendium of the present knowledge.

RECHERCHES CLINIQUES ET THERAPEUTIQUES SUR L'EPILEPSIE, L'HYSTERIE, ET L'IDIOTIE. Compte-rendu du Service des Enfants Idiots, Epileptiques et Arriérés de Bicêtre Pendant L'Année 1900. Par Bourneville avec in collaboration de MM. Crouzon, Dionis de Séjour, Izard, Laurens, Paul-Boncour, Philippe et Oberthur. Volume XXI. Avec 19 figures dans le texte et XI planches. Paris: Progrès Médical. 1901.

This volume, which forms the report on the idiot, epileptic and feeble-minded departments of the Bicêtre under Bourneville, is, like its predecessors, a valuable contribution. The papers it contains are of unequal length, but all of them of more or less special interest. Among them may be mentioned the account of a family cerebrospinal disease by Bourneville and Crouzon, consanguinity in the etiology of epilepsy and alcoholism in the production of these diseases by Bourneville, statistics of the persistence of thymus, the data on the skull in idiocy, microcephalism, etc. This series of works will be of permanent value as containing valuable data in regard to defective humanity.

NURSING, GENERAL, MEDICAL AND SURGICAL. With Appendix on Sick-room Cookery. By Wilfred J. Hadley, M.D., F.R.C.P., F.R.C.S., Physician and Pathologist to the London Hospital. Cloth. Pp. 326. Price, $1.25. Philadelphia: P. Blakiston's Son & Co. 1902.

Among the various books on nursing which have recently appeared this is the latest, and it appears to be fairly well adapted to its purposes. The arrangement perhaps is a little to be criticised. The question occurs to some of us as physicians whether the little knowledge of diseases given in the matter of the larger portion of this book is always a necessary part of the nurse's accomplishments. It is far from being complete, though in the main the information given seems to be correct. The description of the various special duties of the nurse comprises only a small portion of the work and some little nursing wrinkles that are taught in nursing schools are not mentioned. The appendix on sick-room cookery, though brief, is a useful addition.

VALID OBJECTIONS TO SO-CALLED CHRISTIAN SCIENCE. By Rev. Andrew F. Underhill, Rector of St. John's Church, Yonkers, N. Y. Paper. Pp. 49. Price, 25 cents. New York: Edwin S. Gorham. 1902.

The substance of this book was contained in two discourses delivered in Yonkers last January. It is dedicated to "The physicians of Yonkers in recognition of their progressive scientific spirit and unselfish devotion to the cause of humanity." The author shows that Eddyism is neither Christian nor scientific; neither ethical nor moral; that it is purely speculative; and that it is in opposition to all physical and hygienic laws, and to all common sense and reason. It will make an excellent little book for physicians to place in the hands of those of their patients who are open to conviction.

KIRKE'S HANDBOOK OF PHYSIOLOGY. By W. D. Halliburton, M.D., F.R.S., Professor of Physiology, King's College, London. Seventeenth Edition, with 681 Illustrations. 12mo, 888 pages. Price, $3.00 net. Philadelphia: P. Blakiston's Son & Co. 1901.

It has been only two or three years since we noticed the last prior edition of this well-known handbook, which should really be called Halliburton's Physiology. This seventeenth edition has been thoroughly revised, and although it only exceeds the former one by fifteen pages, which are due largely to increased illustrations, sufficient unnecessary typography has been excised to leave a considerable amount of space for new matter, bringing the work as fairly up to date as can be reasonably expected. Any work on physiology rapidly changes in details; the science is a progressive one; hence, the necessity of frequent new editions. The book will undoubtedly retain the favor which it has so long held in professional public opinion.

THE POCKET GRAY, or Anatomist's Vade-Mecum. By the Late Edward Cotterell, F.R.C.S., Fifth Edition, Revised and Edited by C. H. Fagge, M.B., M.S., Lond., F.R.C.S., Senior Demonstrator of Anatomy, Guy's Hospital. Twentieth Thousand. Cloth. Pp. 269. Price, $1.25. New York: Wm. Wood & Co.

The fact that this is the fifth edition of this little work shows its popularity. It is a very convenient reminder of anatomic facts prepared in pocket size. There is no one whose memory is so perfect on everything in our complicated mechanism that he will not find such a reference book occasionally of use. The work is not absolutely complete, as the skeleton aside from the articulations is not included in its matter, but this, probably, is purposely omitted for the saving of space.

ROUGH NOTES ON REMEDIES. By Wm. Murray, M.D., F.R.C.P. Lond., Newcastle-on-Tyne. Fourth Edition. Cloth. Pp. 176. Price, $1.25. Philadelphia: P. Blakiston's Son & Co. 1901.

This little volume, which has arrived at the fourth edition, consists only of a few scattered papers of the practical type that have attracted the attention of the average physician. Some of them are generally interesting, others are purely local, especially the later ones which have been added to this edition, bearing on the local conditions as to health resorts, etc., in Great Britain. One paper which is simply an advertisement of a special kind of alcoholic drink is hardly commendable in a general way.

AN INTRODUCTION TO THE CHEMICAL ANALYSIS for Students of Medicine, Pharmacy and Dentistry. By Elbert W. Rockwood, M.A., M.D., Professor of Chemistry and Toxicology in the Medical, Dental and Pharmacal Departments of the University of Iowa. Illustrated. Cloth. Pp. 255. Price, $1.50 net. Philadelphia: P. Blakiston's Son & Co. 1901.

This volume is intended as a handbook for students in their analytic work in the course of medical college instruction. It is not intended, the author says, to make analytic chemists, but to give something more than a mere smattering in this particular line of work. We should think from our examination of the work that it would be a convenient and useful adjunct to the student's medical course.

ON THE CURE OF THE MORPHIA HABIT WITHOUT SUFFERING. With a Note on the Physiologic Method of Relieving the Craving for Drink. By Oscar Jennings, M.D. (Paris), M.R.C.S. (Eng.), Fellow of the Royal Medico-Chirurgical Society. Second Edition, Revised and Enlarged. Cloth. Pp. 211. Price, $1.50. New York: Wm. Wood & Co. 1901.

For ten years this has deservedly been a sort of standard work in Great Britain. The methods described are rational and we do not know of any small monograph on the subject that answers the purpose any better. The author has rewritten a number of chapters and changed the order of others, introducing new illustrative cases. The book is one that can be recommended.

MANUAL OF PHYSICAL DIAGNOSIS. For the Use of Students and Physicians. By James Tyson, M.D., Professor of Medicine in the University of Pennsylvania and Physician to the University Hospital. Fourth Edition, Revised and Enlarged, with Colored and Other Illustrations. 12mo. Cloth, $1.50 net. Philadelphia: P. Blakiston's Son & Co. 1901.

This is the fourth edition of a well-known manual which has been carefully read, revised and brought up to date by the author. That it has already received such success, shows its estimation by the profession.

Married.

JOSEPH C. BUSSEY, M.D., to Miss Julia Isaacs, both of Louisa, Ky., March 17.

ELIZABETH JOHNSON, M.D., to Rev. Evert Van Slyke, both of New York City, April 3.

LOUIS T. KENNEDY, M.D., to Miss Harriett Bland, both of Pottsville, Pa., April 1.

M. H. THOMAS, M.D., to Miss Cosette Watkins, both of Huntington, Ind., March 30.

JOHN C. HOYE, M.D., to Mrs. Elizabeth McGraw, both of Newcastle, Pa., April 2.

HUGH P. FLEMING, M.D., to Miss Ethel Gormully, both of Ottawa, Ontario, April 16.

GEORGE D. SITZER, M.D., to Mrs. L. Grace Thomas, both of Charles City, Iowa, April 1.

WALTER REEVE RAMSEY, M.D., to Miss Ruth Albia Lusk, both of St. Paul, Minn., April 19.

JACOB M. MCWILLIAMS, M.D., to Miss Ova Goodner, both of Fayetteville, Tenn., March 26.

M. M. HALLUM, M.D., Carrollton, Ga., to Miss Beulah Murphy, of Newnan, Ga., March 26.

MALCOLM S. COUNCILL, M.D., Bryn Mawr, Pa., to Miss Helen Duer, of Philadelphia, March 31.

WILLIAM H. CUSHING, M.D., to Miss Gertrude E. Kranich, both of Southington, Conn., March 31.

HENRY E. ARMSTRONG, M.D., Billings, Mont., to Mrs. Mattie Capple, at Los Angeles, Cal., March 4.

WILLIAM HOUSTON TANKSLEY, M.D., to Miss Laura Hayes Webb, both of Nashville, Tenn., April 2.

ARTHUR M. JOHNSON, M.D., Rochester, N. Y., to Miss Lucy E. Finch, of Binghamton, N. Y., March 31.

RAY BURNEY TUBBS, M.D., of Tacoma, Wash., to Miss Ethel Percy Opdyke, of Plainfield, N. J., March 15.

HARRY WALSH, M.D., Chickasaw, I. T., to Miss Bessie De Verter, of Lodi, Ind., at Chickasaw, March 27.

THOMAS JEFFERSON DAVIS, M.D., Jordan, S. C., to Miss Minerva Goode Holden, of Petersburg, Va., April 8.

WILLIAM J. RITCHIE, M.D., Warren, Ohio, to Miss Edith Maud Clement, of Brantford, Ontario, April 16.

FRANCIS WALTER ERNEST WILSON, M.D., to Miss Mary Victoria Beatrice Ferguson, both of Niagara Falls South, Ontario, March 31.

HENRY GIDEON WELLS, M.D., a member of the faculty of the University of Chicago, to Miss Bertha Robbins, of Newington, Conn., April 2.

CLARENCE W. WILLE, M.D., assistant surgeon, U. S. Marine-Hospital Service, Old Point Comfort, Va., to Miss Helen Davis Hague, of Elkton, Md., March 26.

DR. AND MRS. JAMES THOMAS JELKS, Hot Springs, Ark., announce the marriage of their daughter, Julia Roberta, to Mr. William C. Morris, of Pony, Mont., April 8.

Deaths and Obituaries.

John Kennington Leaning, M.D. Castleton (Vt.) Medical College, 1848, a prominent physician of Cooperstown, N. Y., died at his home in that place, April 4, after an illness of five days, from pneumonia, aged 78. Dr. Leaning had practiced medicine in Otsego County for 54 years. He was a member of the County Medical Society, the New York State Medical Association and the American Medical Association. He was also president of the medical board of Thanksgiving Hospital, Cooperstown. Otsego County Medical Society, at a special meeting held in Cooperstown, April 7, passed resolutions of sorrow and sympathy.

William L. Williams, M.D. Medical College of Virginia, Richmond, 1841, one of the oldest, most successful and highly-esteemed physicians of Virginia, who had practiced in Nelson County for more than 50 years, and had served his county in the state legislature, died at his home in Avon, after a painful illness, April 8, aged 83.

John Ahl, M.D. College of Physicians and Surgeons, Baltimore, Md., 1875, one of the oldest physicians of York, Pa., who had at times filled the positions of coroner, jail and almshouse physician and health officer, died from senile gangrene at his home in York, April 4, after an illness of three months, aged 79.

Thompson D. Fisher, M.D. Rush Medical College, Chicago, 1857, a retired physician, of Leroy, Ill., some-time president of the McLean County Medical Society and a member of the Illinois State Medical Society, died at his home in Leroy, April 6, after an illness of two weeks, aged 75.

John L. Eddy, M.D. Castleton (Vt.) Medical College, 1854, one of the most prominent physicians of Western New York, a veteran of the Civil war, and at one time president of the State Association of Railway Surgeons, died suddenly at his home in Olean, N. Y., April 5, aged 73.

John Eccles, M.D. University of Pennsylvania, Philadelphia, 1896, a former practitioner of Philadelphia, who had been for two years a medical missionary in Central America, died from septicemia at the United Fruit Company's Hospital, Bocas del Toro, Colombia, January 18.

J. W. H. Vest, M.D. Starling Medical College, Columbus, Ohio, 1847, a practitioner of Montezuma and Des Moines, Iowa, since 1856, a surgeon and later medical director of an army corps in the Civil war, died at the home of his son in Montezuma, April 5, aged 79.

Ulick W. C. Burke, M.D. Bellevue Hospital Medical College, New York, 1880, a specialist in diseases of the gastro-intestinal tract, died at his home in Brooklyn, April 3, from heart disease, after an illness of two weeks.

William E. Huger, Jr., M.D. University of Virginia, Charlottesville, 1897, assistant on surgical staff of the Johns Hopkins Hospital, Baltimore, died in that institution, March 29, from typhoid fever, after a short illness.

Henry C. Linn, M.D. Washington University, St. Louis, 1864, who had practiced medicine since 1833 and was the oldest physician and resident of Butler, Pa., died suddenly at his home in that place, April 3, aged 90.

William J. Poe, M.D. Memphis (Tenn.) Hospital Medical College, 1893, formerly of De Leon, Texas, but for the last three years a practitioner of Carbon, Texas, died at his home in that place, April 6, from pneumonia.

Francis M. Gunnell, M.D. National Medical College, Washington, D. C., 1846, formerly a surgeon in the United States Navy, who was retired for age in 1889, died at his home in Washington, April 5, aged 74.

John H. Blau, M.D. University of Gratz, Austria, 1852, a pioneer physician of Covington, Ky., who had been in practice for 50 years in that place, died at his residence, April 3, after a long illness, aged 69.

James T. Atchison, M.D. University of Louisville (Ky.), 1857, one of the most widely-known practitioners of Jefferson County, Ky., died at his home in Lochland, April 6, after a long illness.

Robert Q. Wilson, M.D. Rush Medical College, Chicago, 1853, one of the wealthiest and most prominent citizens of Kokomo, Ind., died at his home in that city, March 31, aged 80.

Charles N. Hayden, M.D. University of Wooster, Cleveland, Ohio, 1866, the oldest practitioner of Lansing, Mich., died at his home in that city, April 7, after a lingering illness, aged 70.

Carl Gottlieb Hirner, M.D. Tübingen, Germany, 1853, died at his home in Allentown, Pa., April 4, from pulmonary tuberculosis, after a long illness, aged 67.

Will C. Brumfield, M.D. Washington University, St. Louis, Mo., 1877, of Porterville, Tulare County, Cal., died in San Francisco, after a short illness, April 4.

J. W. Onstott, M.D. University of Wooster, Cleveland, Ohio, 1885, died at his home in McKees Rocks, Pa., April 4, after a prolonged illness, aged 43.

William Wood, M.D. Castleton (Vt.) Medical College, 1852, a resident of Cairo, Ill., for half a century, died at his home in that city, April 5, aged 80.

Henry Herbert Vinke, M.D. Missouri Medical College, St. Louis, 1882, died at his home in St. Charles, Mo., from pneumonia, April 9, aged 42.

Charles H. Berry, M.D. University of Michigan, Ann Arbor, 1868, died at his home in Columbia City, Ind., March 28, from paralysis, aged 60.

Alexander McCoy, M.D. a prominent physician of Tazewell County, Ill., for nearly fifty years, died at his home in Pekin, April 2, aged 79.

William E. Lee, M.D. Memphis (Tenn.) Hospital Medical College, 1884, died at his home in Montcalm, Lincoln parish, La., April 1.

Julius C. Pasley, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1878, died recently at his home in Arcadia, Kan., aged 52.

James J. Pinckard, M.D. Louisville Medical College, 1871, died recently at Beaumont, Texas.

Miscellany.

AN OPERATING TABLE.

THOMAS M. HOPKINS, M.D.
DENVER, COLO.

It may seem presumptuous in me to intimate that any improvement can be made in the operating tables used in our well-equipped modern hospitals. There is one criticism, however, which I think is quite reasonable; to place a patient upon a cold glass or metallic table, saturate his clothing with

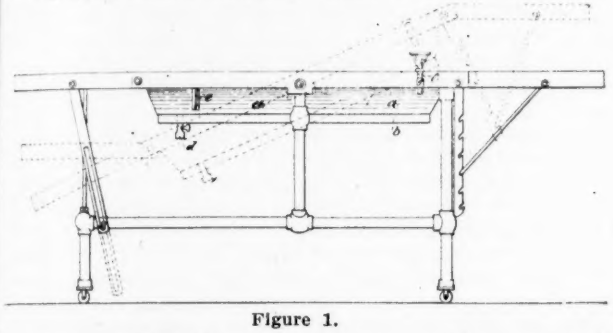

Figure 1.

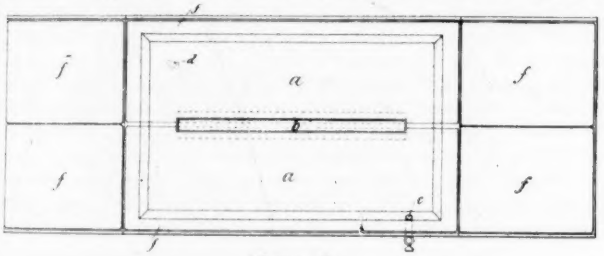

Figure 2.

water, and allow him to remain in this condition for an hour or more, appears to me to be subjecting him to an unnecessary

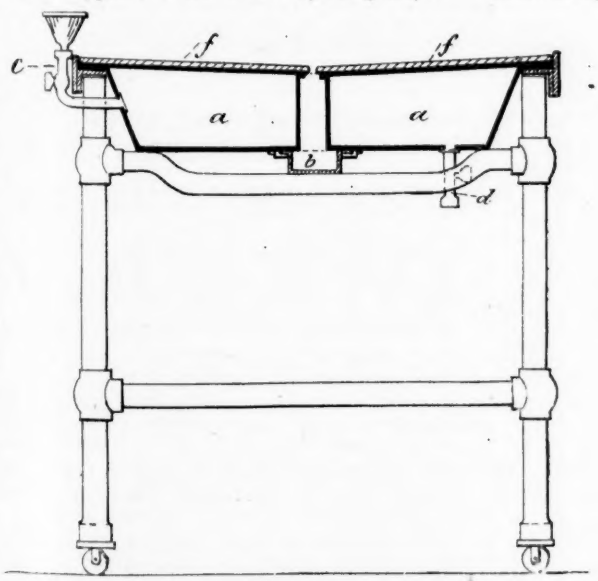

Figure 3.

and dangerous exposure. I have devised an appliance which will overcome these objections.

The accompanying drawings illustrate how a table can be made which will furnish a warm surface for the patient to lie upon during the operation.

Fig. 1 shows side view of the table. *a*, Represents a reservoir attached to the table upon which the glass slabs will lie. The reservoir is to be made water tight and filled with warm water. *b*, Represents the drip trough underneath. *c*, Represents the inlet which is controlled by a cock through which water can be poured by means of a funnel. *d*, Is the outlet also controlled by a cock. *e*, Represents a thermometer placed inside the reservoir with a small glass window at the side, so that the temperature of the water may be readily seen.

Fig. 2 represents top view of the table, showing the reservoir underneath the glass slabs, *f*, upon which the patient will lie.

Fig. 3 represents cross section of the table showing the reservoir in position; *f*, represents the glass slabs resting directly upon the reservoir, the slot between them allows the fluids to flow into the drip trough *b*, which can be withdrawn and cleansed.

Fig. 4 represents enlarged detail section of the reservoir and the manner in which it is secured to the frame of the table.

The reservoir may be made of aluminum, copper or any other suitable material. It can be applied to any table by making a few alterations. If the water in the reservoir becomes cold, a small amount can be withdrawn and hot water added

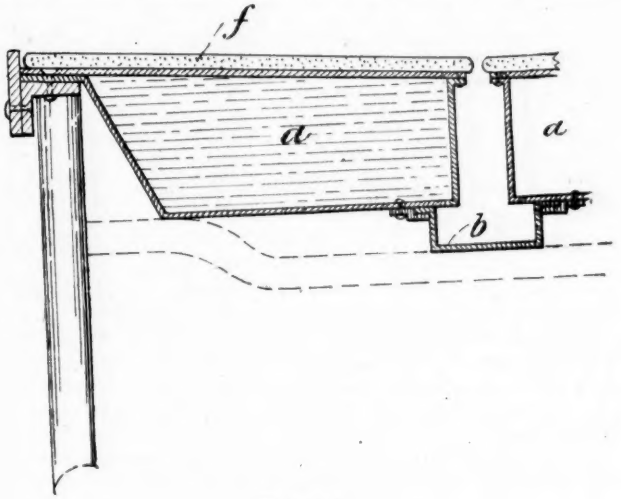

Figure 4.

in sufficient quantity to raise the temperature of the water as high as desired. To maintain the heat of the water an alcohol lamp or a gas jet may be placed under the reservoir during the interval between operations.

In representing my idea by these drawings, I have used the frame of the Baldwin table, as its construction is simpler than any other one with which I am familiar. I invite the criticism of the members of the profession upon this appliance, and if, in the opinion of those competent to judge, it has merit, I hope an early day will see it adopted into general use.

2710 E. 12th Ave.

Association News.

Conference of the Committee on National Legislation of the American Medical Association.

The third annual conference of the Committee on National Legislation of the American Medical Association was called to order by the chairman, Dr. H. L. E. Johnson, at 9 a. m., April 10, at the Arlington Hotel, Washington, D. C. Twenty-four members were present. Dr. Emil Amberg, chairman of the Committee on Uniform Legislation on basis of uniform medical education, presented a report which was discussed very generally and after slight modification was unanimously adopted and approved, and on motion was referred to the House of Delegates at the Saratoga meeting. The Committee

on State Medical Organization, Dr. Shinault, chairman, made a report of the work of that committee since the last conference. The report was further discussed by Drs. Bracken, Goff and others. The death of Dr. L. B. Tuckerman of Cleveland, Ohio, was announced, and Dr. Amberg was appointed a committee to draw up suitable resolutions of regret, which, on presentation, were adopted. The Committee on National Legislation made a report of its work *ad interim*, and made many recommendations, which, on motion, were approved by the conference. The official action of the Conference of State Health Officers at Washington, March 12-13 last, and their recommendations to Congress and this conference, on the several pending National Health Bills were considered and approved. They recommend the adoption of the Perkins-Hepburn Bill, with the following amendment to Section 7, "That when, in the opinion of the Surgeon-General of the United States Health Service, the interests of the public health would be promoted by a conference with the state or territorial boards of health or health authorities, the District of Columbia included, the Surgeon-General of the United States Health Service may, or, on the application of five state boards of health or quarantine officers, he shall invite representatives of state boards of health, and the quarantine officers to send delegates —not more than one from each state and territory and District of Columbia— to said conference."

A committee of three, consisting of Drs. H. L. E. Johnson, Wm. H. Welch and Wm. H. Rodman, was appointed to wait upon the committees in Congress having charge of the bill, and urge its passage with the proposed amendment. (The committee conferred with Senator Spooner and complied with the instructions of the conference.) The conference took up the consideration of Senate Bill 189, providing for the further prevention of cruelty to animals in the District of Columbia, recommending adverse action by Congress. Dr. Welch presented resolutions against the adoption of the bill, and he was appointed a committee of one to present these as the sense of the conference to the House and Senate. Favorable action was taken on the Nelson Bill to establish the Department of Commerce and Labor; the Proctor Bill to provide for the payment of medical expenses of sick officers and enlisted men of the Army while absent from duty with leave or on furlough, and the amendment to Section 18 of Act 4300, the Army Reorganization Bill, as proposed by Dr. John J. Riley, U. S. A., of the Legislative Committee of the Medical Officers of the U. S. A. at Manila, Philippine Islands. The report of Surgeon-General George M. Sternberg, ex-president of the American Medical Association, on Army Medical Reorganization was received with applause and adopted unanimously. Reports were received and Dr. Marmion, representing the Medical Department of the United States Navy, Dr. Salmon, the Bureau of Animal Industry, and the delegate from each state medical society represented, all of which received the unanimous approval of the conference. To carry out the expressed wishes and various resolutions of the American Medical Association, the following was presented by the Committee on National Legislation, unanimously adopted by the conference with instructions to the same committee to present the matter to Congress and secure its passage.

On June 7, 1899, the American Medical Association approved the following resolution:

WHEREAS, The position of Surgeon-General of the United States Army involves great and grave responsibility, the direction of vast interests, the highest order of professional skill and learning and executive ability; and

WHEREAS, The number of officers and soldiers under the direction of the Surgeon-General in an army organized as is the Army of the United States is greater than the command of a division commander, be it

Resolved, That it is the sense of this body that the Surgeon-General of the Army should have the rank, pay and allowances of a major-general.

The officer who was Surgeon-General at the time this resolution was passed was Brig.-General George M. Sternberg, whose period of forty-one years' service will expire June 8, 1902.

General Sternberg entered the Army May 31, 1861, at the beginning of that momentous period in the history of our country, and served throughout the war of secession—for the most part in the field—where he rendered valuable and efficient service, for which he received honorable mention and brevet rank. Subsequently, for many years, he served on the frontier and in several Indian expeditions, where he added to the reputation already gained.

General Sternberg early appreciated the enormous importance to humanity that would result from the scientific development of the germ theory of disease, to which he devoted himself so assiduously and with such success that his name is recognized throughout the world as one of the pioneers in the science of bacteriology, his works on that subject being among the most valuable extant.

General Sternberg was appointed Surgeon-General of the Army May 30, 1893. He immediately devoted himself to the advancement of his corps along scientific lines with which he was so familiar. He at once organized the Army Medical School, wherein the recently appointed officers of the corps are instructed in the special subjects most important to the successful performance of their work. He established at every permanent post a bacteriologic laboratory and demanded that the professional work of the corps be advanced to the highest plane. During the first five years of his incumbency he exerted every effort to place his corps in a position to meet the exigencies of war. Before assuming the office of Surgeon-General he had already qualified himself by experience in every field that a medical officer could be called upon to explore, and by the deepest study of the causes of disease to undertake the direction of the most difficult department of the Army. Through his persistent efforts the beginning of the war with Spain found the personnel of his department ready to meet the demands of active service to the full limit of the Army for which it was organized. When this war was declared he immediately proceeded, amidst great legislative embarrassments and administrative obstacles, to organize a medical department from the civil profession to meet the demands of a new army of 250,000 men.

"The enormous addition to his labors, due to a sudden multiplication of a combatant force by ten, and the final retention of the permanent strength at four times the antebellum number, has been met by him readily and easily, performing duties many times more arduous and responsible than those of a major-general (except only the Commanding General in the Division of the Philippines), and he has remained a brigadier-general, although the medical profession of the country has unanimously urged the advancement of the surgeon-generalcy to the grade of major-general."

A glance at the functions of the Medical Department of the Army will convince any unprejudiced person of the enormous responsibilities attaching to its chief. They are:

First. To investigate the sanitary condition of the Army and make recommendation in reference thereto.

Second. To care for the sick and wounded.

Third. To make physical examinations of officers and enlisted men.

Fourth. To manage and control military hospitals.

Fifth. To recruit, instruct and control the Hospital Corps and Nurses' Corps.

Sixth. To furnish all medical and hospital supplies for the department.

It will be observed from the foregoing that the responsibilities of the Surgeon-General attach primarily to men (secondarily, to material). He has control of, and is responsible for, the sick of the entire army and the personnel necessary to their care.

Assuming that the sick number 7 per cent. and the personnel 5 per cent., it is seen that 12 per cent. of our army constitutes the command of the Surgeon-General. With us to-day that means a responsibility for twelve thousand men, which is about the equivalent of a division. But aside from these twelve thousand men, the functions of the Surgeon-General extend widely beyond that of a major-general of the line, for he has advisory supervision of the sanitary condition of the entire army. He must direct the examination of every recruit who enters the service, and of every man who is discharged for disability; of every officer at entrance, promotion, etc. He must recruit, instruct and discipline the Hospital Corps—a body of nearly 5000 men. He must organize, super-

vise and direct the administration of all military hospitals and he must purchase the medical and surgical material necessary for the service. No other officer in the army combines the dual function of control of personnel and the supply of material as is done by the Surgeon-General, and no other officer has the responsibilities that attach to him.

We need not go afield in civil life to seek comparisons between the responsibilities of this office and those of the captains of industry, but it is not hard to imagine that the amount of executive capacity and actual work demanded of the head of the medical department could not be obtained in civil life for five times the remuneration which he receives. In other armies, where the responsibilities of the surgeon-general are often less than our own, he is given a much higher rank: in the British service, that of a lieutenant-general; in the German and French services, a major-general. In fact everywhere the importance of the office and the dignity attaching to it are recognized by rank, without which no military office can be effective.

General Sternberg's military services have been so important, so devoted, that his appointment as Major-General would be but just recognition thereof. This certainly should be done as a mark of appreciation by his country of his services as a soldier.

His accomplishments as a scientific and professional man are already a part of the history of modern medicine, and his work for humanity is honored by all the world. Congress can not add to this physician's honors, but through it the country can give material recognition of its debt to one who has worked far beyond the ordinary measure for its welfare. Congress can reward the head of the Medical Department of the Army and through him recognize the great work of a devoted corps, to which praise has come sparingly and material reward not at all.

In view of the foregoing we, the representatives of the American Medical Association, respectfully submit to Congress the following bill, the adoption of which is earnestly recommended:

Be it enacted by the Senate and House of Representatives of the United States of America, in Congress Assembled, That the President of the United States is hereby authorized to select one from the medical officers of the Army, who has served forty-one years or more, nine years of which as surgeon-general, and by and with the advice and consent of the Senate, appoint him a Major-General of the United States Army for the purpose of placing him on the retired list.

Hotel Rates.—The Kensington Hotel rates, appearing in the issue of April 12, should be for single rooms $3 to $4, and for double rooms $6 to $8 per day.

American Medical Association Membership.—Two hundred and fifty-eight new members of the A. M. A. are reported by THE JOURNAL for the month of January. Not one new member from Minnesota! What is the matter with our medical men? South Dakota sent in 6 new names, North Dakota 2, Wisconsin 6, Iowa 4, and California 30. Dr. Wyeth, the new president, in a circular letter urges medical men to join the "only representative National organization in the Union," the one great aim of which is to federate into one compact organization the medical profession of the United States. Its comprehensive scheme embraces the formation in every county of a medical society, with a uniform constitution and by-laws, each of which shall belong to the state association, organized and governed with equal uniformity, and all a part of the National body. Of course it is expected that difficulties may arise in counties or states where societies are few and at too great a distance for medical men to attend. Such matters will be adjusted in time by the formation of new county societies or the eligibility of men to societies in adjoining counties. These possible delays should not prevent men in populous counties where societies already exist from joining the Association. Let our Minnesota medical men bend every effort to affiliate with a society, and send in applications for membership to the A. M. A. that Minnesota may make a good showing before the meeting at Saratoga.—*Northwestern Lancet.*

Societies.

COMING MEETINGS.

American Medical Association, Saratoga Springs, N. Y., June 10 to 13.
Medical and Chirurgical Faculty of Maryland, Baltimore, April 22, 1902.
Association of American Physicians, Washington, D. C., April 29 to May 1, 1902.
American Association of Genito-Urinary Surgeons, Atlantic City, N. J., April 30, 1902.
International Association of Railway Surgeons, St. Louis, Mo., April 30 and May 1 and 2, 1902.
American Gastro-Enterological Association, Washington, D. C., May 2, 1902.
Nebraska State Medical Society, Omaha, May 6-8, 1902.
Texas State Medical Association, Dallas, May 6-9, 1902.
Kansas Medical Society, Lawrence, May 7-9, 1902.
American Therapeutic Society, New York City, May 13, 1902.
Utah State Medical Society, Salt Lake City, May 13-14, 1902.
Oklahoma Territory Medical Association, Oklahoma City, May 14, 1902.
Arkansas Medical Society, Little Rock, May 13-15, 1902.
New Hampshire Medical Society, Concord, May 15-16, 1902.
Illinois State Medical Society, Quincy, May 20-22, 1902.
American Surgical Association, Albany, N. Y., May 20-22, 1902.
Medical Association of the State of Missouri, St. Joseph, May 20-22, 1902.
Kentucky State Medical Society, Paducah, May 7-9, 1902.
Arizona Medical Association, Tucson, May 21-22, 1902.
Medical Society of West Virginia, Parkersburg, May 21-23, 1902.
Medical Association of Montana, Anaconda, May 21-22, 1902.
Iowa State Medical Society, Des Moines, May 21-23, 1902.
Indiana State Medical Society, Evansville, May 22-23, 1902.
American Pediatric Society, Boston, May 26-28, 1902.
American Laryngological Association, Boston, Mass., May 26-28, 1902.
American Gynecological Society, Atlantic City, May 27, 1902.
Connecticut Medical Society, New Haven, May 28-29, 1902.
Ohio State Medical Society, Toledo, May 28-30, 1902.

Rappahannock Valley (Va.) Medical Society.—This Society held its annual meeting at Fredericksburg, Va., March 27, and elected Dr. J. Edward Tompkins, Fredericksburg, president.

Lyon County (Kan.) Medical Society.—This Society held its annual meeting at Emporia, April 1, and elected Dr. Thomas F. Foncannon, president, and Dr. Jonathan J. Wright, vice-president and treasurer.

Terrell (Texas) Medical Society.—On March 28, this Society held it annual meeting and elected Dr. William H. Neely, president; Drs. Thomas B. Bass and Samuel M. Gladney, vice-presidents, and Dr. James Orr, secretary.

Butte (Mont.) Medical Society.—This Society was organized, April 6, with the following officers: Dr. Havelock H. Hanson, president; Dr. Thompson G. Heine, vice-president; Dr. Thomas B. Moore, secretary, and Dr. Willis H. Haviland, treasurer.

Henry County (Tenn.) Medical Society.—At a meeting of this Society, at Paris, April 7, the following officers were elected: Dr. Felix F. Carter, president; Dr. Richard A. Grainger, vice-president, and Dr. John H. McSwain, secretary and treasurer, all of Paris.

Orange County (Cal.) Medical Association.—At its annual meeting, April 4, Dr. James P. Boyd, Santa Ana, was elected president; Dr. William Freeman, Fullerton, vice-president; Dr. John L. Dryer, Santa Ana, secretary, and Dr. Charles D. Ball, Santa Ana, treasurer.

University of Texas Medical Club.—This club was organized, January 6, and will meet monthly. The following officers were elected: Dr. James E. Thompson, president; Dr. John T. Moore, vice-president; Dr. William Kieller, secretary-treasurer, and Dr. William S. Carter, recorder.

New London County (Conn.) Medical Association.—The annual meeting of this organization was held at New London, April 3. Dr. Newton P. Smith, Norwich, was elected president; Dr. Harold H. Heyer, New London, vice-president, and Dr. Morton E. Fox, Montville, clerk and treasurer.

Medical Association of the District of Columbia.—At a meeting of this Society, held April 1, the following officers were elected: Dr. George N. Acker, president; Drs. John R. Wellington and Edmund L. Tompkins, vice-presidents; Dr. Monte Griffith, secretary, and Dr. Frank Leech, treasurer.

Iola (Kan.) Medical Society.—The physicians of Iola met, March 31, and organized this Society, the membership of which is to be limited to the physicians of Allen County. Dr. Frank D. Teas was elected president; Dr. Wyatt, vice-president; Dr. Gantz, secretary, and Dr. W. H. McDowell, treasurer.

Faulkner County (Ark.) Medical Society.—The physicians of Faulkner County met at Conway, March 24, and organized a medical society, with the following officers: Dr. George D. Dickerson, president; Dr. Charles H. Voris, vice-president, and Dr. Joseph S. Westfield, secretary and treasurer, all of Conway.

Waynesboro (Pa.) Academy of Medicine.—This organization, which was established in 1884, flourished until 1890, and since that time has been inactive, was reorganized, April 4, with the following officers: Dr. James B. Amberson, president; Dr. A. B. Sollenberger, vice-president, and Dr. Percy D. Hoover, secretary and treasurer.

Denison (Texas) Medical Association.—The physicians of Denison met, April 3, and organized a society, with an initial membership of seventeen. Dr. Ashel B. Gardner was elected president; Dr. Pierre Wilson, vice-president; Dr. D. Ross, secretary; Dr. John M. Owensby, corresponding secretary, and Dr. Daniel H. Bailey, treasurer.

Golden Belt (Kan.) Medical Association.—This Society, whose membership is made up from the physicians of Central Kansas, met at Abilene, April 4, and elected Dr. John C. McClintock, Topeka, president; Dr. John T. Curtiss, Dwight, secretary, and Dr. Cassius W. Brooks, Enterprise, treasurer. The next meeting will be held at Chapman, in July.

Pulaski County (Ill.) Medical Society.—The annual meeting of this Society was held at Villa Ridge, April 1. Dr. Marcus L. Winstead, Wetaug, was re-elected president and Dr. Charles J. Boswell, Beechwood, secretary. The next meeting will we held in Mound City, July 1. It was decided to make Mound City the permanent meeting place and to hold meetings quarterly.

Polk County (Iowa) Medical Society.—The annual meeting, election of officers and banquet of this Society were held, April 1. Dr. Charles D. Rawson was elected president; Dr. Edith G. Fosnes, first vice-president; Dr. Granville N. Ryan, second vice-president; Dr. Lenna L. Means, secretary, and Dr. William S. Conklin, treasurer, all of Des Moines. Dr. Michael F. Patterson, Des Moines, presided over the banquet as toastmaster.

Association of House Physicians of Harper Hospital (Detroit).—Ex-internes and members of the present house staff of Harper Hospital, to the number of 21, met at the hospital, April 3, for organization. The following officers were elected: Dr. Henry O. Walker, president; Drs. Howard W. Longyear, John K. Gailey, and Frederick W. Robbins, vice-presidents; Dr. F. R. McClure, secretary, and Dr. Richard T. Mason, treasurer, all of Detroit.

Clark County (Ohio) Medical Society.—At the regular meeting of this Society, at Springfield, April 3, Dr. John H. Rodgers delivered an address on the "Reorganization of the Medical Societies." He believes in the reorganization as laid down by the American Medical Association, that is, a reorganization from the county societies to the national association on a uniform basis. The general principle involved is the putting of the Society on a better basis for scientific and literary work, and for anything which pertains to the advancement of the profession.

TENNESSEE STATE MEDICAL SOCIETY.

Sixty-ninth Annual Session, held at Memphis, April 8-10.

President, Dr. Deering J. Roberts, Nashville, in the Chair.

Address of Welcome.

This meeting was a profitable and interesting one and was well attended. Among the visitors were Drs. Frank Billings and Fenton B. Turck, Chicago; Edwin S. Ricketts, Cincinnati; J. N. MacCormack, Bowling Green, Ky., and P. W. Rowland, Oxford, Miss. The meetings of the Society were held at the Peabody Hotel.

The address of welcome was delivered by Dr. E. M. Holder, who referred to the great work done by physicians and surgeons from the earliest times for the sake of science. In conclusion he said: "It seems to me that the most beautiful benediction of the medical profession has descended upon the poor. There is no excuse now for anyone not receiving scientific treatment. All over the civilized world there are dispensaries and hospitals under the control of the very best doctors. A half-starved woman comes out from her low tenement house into the dispensary and unwraps the rags from her baby and over the little sufferer bends the accumulated wisdom of ages. In one dispensary in one year 150,000 prescriptions were written. Who will say that anesthesia is not of greater benefit to the world than all the poetry that was ever written? Or that asepsis in the operating room does not represent a greater wealth of service than has been rendered by all the artists and novelists who ever trod the earth? Long may such achievements live in song and story to inspire countless generations of youths yet unborn with love for the science of medicine and surgery."

Dr. Billings on Cirrhosis.

After Dr. S. R. Miller, Knoxville, responded in brief and appropriate terms to the address of welcome and the committee on arrangements reported, the first feature on the official program was the special address by Dr. Frank Billings on "Symptoms and Signs from the Early Stages of Cirrhosis, with Report of Cases." The paper was one of the most learned and instructive treatises that has been presented before the Society and was discussed by Drs. Henning, Frank Jones of Memphis, Cowan of Tullahoma, Sheddan of Columbia, and Fenton B. Turck of Chicago.

Pneumonia.

DR. G. B. HENNING, Memphis, read a paper on "Pneumonia." His conclusions are that the mortality from this disease has not decreased with the advance of medical science. He regretted that no routine treatment could be offered for this disease, and advised that the patient be treated as the symptoms developed.

DR. DEERING J. ROBERTS, Nashville, praised creosote in the treatment of pneumonia.

DR. REAGOR, Shelbyville, believes that the death-rate from pneumonia was higher now than in the days of venesection, and furthermore believes that bleeding would yet be recognized as an important feature in the treatment.

In closing the discussion Dr. Henning stated that there were only two anatomic conditions to deal with in pneumonia. When the disease attacked the air passages it became catarrhal and was likely to be protracted and the contrast between the mortality of pneumonia in the city and country was very marked, the mortality being much higher in the country despite the fact that the patients were, as a rule, more robust. He agreed with the last speaker that the lancet was often efficacious.

Gunshot Wounds of the Stomach.

DR. PAUL F. EVE, Nashville, reported a case of gunshot wound of the stomach. The surgeon should exercise the greatest care in these cases in searching for wounds of the stomach, as almost invariably two punctures will be found. The stomach should be dilated for thorough examination and sutured. No nourishment should be allowed in the stomach for at least three or six days, then nothing but liquids. He never allows solids or any food capable of fermentation to be given until eighteen or twenty days after the operation.

President's Annual Address.

At the evening session Dr. J. B. Murfree, Jr., first vice-president of the association, occupied the chair. The president, Dr. Deering J. Roberts, delivered his annual address. He outlined the histories and deeds of former presidents of the Tennessee Medical Society from 1830 to the present time. He cited the fact that through the association and its members much beneficial medical legislation has been secured, and mentioned that the society was more than 15 years older than the American Medical Association, and three of the members of the former society have been elected president of the national organization. He paid a tribute to the generation of young practitioners who, he stated, are the control spirits of the day and are superior to the former generation as they have better advantages, better opportunities and in addition the experience of their predecessors to help them. During the year the number of affiliated local and county societies was increased from 14 to 21.

Controversy Between Two County Societies.

The Judicial Committee, to which has been referred the controversy between the Shelby County Medical Society, a recently organized society and the Memphis and Shelby County Medical Society, reported in favor of the latter society, which has long

been affiliated with the state organization under the name of the Memphis Medical Society and has complied with all the requirements of the state and American Medical associations. The societies of Lincoln and Hardeman counties were also recognized and the recognition of the societies of Overton and Lauderdale counties were deferred until certain amendments should be made to their constitution and by-laws.

The Hippocratic Oath.

DR. J. H. PRESTON, Humbolt, advocated that the profession should reaffirm its loyalty to the Hippocratic oath. He feared that too much commercial spirit was creeping into the profession, and appealed for a higher regard for medical ethics. He stated that there shou'd be in the ranks of the profession the system of freemasonry whereby the differences and friction of the members might be kept a secret from the laity, and closed with an earnest appeal for the adherence to the Code of Ethics.

Pathologic Tonsils.

DR. RICHMOND MCKINNEY, Memphis, read a paper on "Pathologic Tonsils with Some Considerations of Treatment," in which he said that the prejudice against the removal of tonsils was born of ignorance. He strongly advocated the operation and described in detail the symptoms and treatment of the various diseases of the tonsils and of the operations for their removal. His observation has been that the range of the singing voice is greatly increased rather than injured by the removal of the tonsils.

Dr. Turck on Gastro-Enteroptosis.

The second day's session, April 9, opened with a paper by Dr. Fenton B. Turck, Chicago, on "Gastro-enteroptosis," in which he illustrated the various stages of the disease by large *x*-ray photographs, and described the modern methods of diagnosis and treatment.

Smallpox and Mercury Bichlorid.

DR. F. W. RIDINGS, Dickson, presented a paper on "Bichlorid of Mercury in the Treatment of Smallpox." In the portion of the state in which Dr. Ridings resides there appears to have been a special susceptibility to smallpox, and he has almost limitless opportunities for observation and treatment. He described his method of treatment of the disease by bichlorid of mercury baths and asserted that the specially low mortality of the patients was due, in some measure at least, to this treatment.

Adoption of the New Constitution and By-Laws.

At the afternoon session, the Judicial Council reported that it had given careful consideration to every section of the new constitution and by-laws, and each section had been unanimously adopted. They were practically the same as those adopted by the American Medical Association and conformed to all the requirements of that body. After considerable discussion the constitution and by-laws were adopted as a whole.

Necrology.

The Necrology Committee reported that since the last meeting of the society the following men had died: Dr. R. L. Bush, Gallatin, graduated from the University of New York in 1865; Dr. William L. Nichol, Nashville, University of Pennsylvania, in 1849; Dr. E. P. Sale, Memphis, Tulane University, 1869; Dr. B. W. Stone, Louisville, Ky., Kentucky School of Medicine, 1868; Dr. Charles William Beaumont, Clarksville, University of Pennsylvania, and Dr. Asa Bell, Henderson. The report of the committee was accompanied by an eloquent and feeling tribute to the memory of the late Dr. Beaumont, written by Dr. C. W. Runyon of Clarksville.

Medical Examiners and Board of Health.

The resolution was unanimously adopted that the society have the Governor appoint Dr. T. J. Happel, Trenton, a member of the State Board of Medical Examiners for the western division of the state.

The resolution offered by the Secretary that it be the sense of the society that the medical members of the State Board of Health be appointed from members affiliated and in accord with the State Medical Society was enthusiastically adopted.

Injuries of the Tarsus.

DR. T. J. HAPPEL, Trenton, read a paper on "Injuries of the Tarsus, with Reports of Three Cases." He took the position that no wound or puncture of the foot, however trivial, should be neglected. Even if it were a mere scratch, it was worthy of the most careful surgical attention and aseptic treatment; if this care were taken cases of tetanus would be less frequent.

Treatment of Pelvic Lesions.

DR. EDWIN RICKETTS, Cincinnati, read a paper on "Diagnosis and Treatment of Pelvic Lesions," in which he paid an eloquent tribute to the distinguished physicians of the South. The scientific portion of the paper provoked a spirited discussion, in which Drs. McGarnon of Nashville, Crawford of Memphis, Burch of Nashville, Haggard of Nashville and Sheddan of Columbia entered.

April 10—Morning Session.

In the election of officers, Dr. S. R. Miller, Knoxville, was made president; Dr. Cooper Holtzclaw, Chattanooga, vice-president; Dr. F. J. Runyon, Clarksville, third vice-president; Dr. Deering J. Roberts, Nashville, secretary; Dr. W. C. Bilbro, treasurer; Dr. W. F. Glenn, Nashville, delegate to the American Medical Association, and Dr. B. C. Savage, alternate.

The society adjourned to meet in 1903 in Nashville.

SEMI-CENTENNIAL MEETING OF CHICAGO MEDICAL SOCIETY.

Celebrated April 9, 1902, at the Auditorium Hotel.

Dr. Alexander Hugh Ferguson, in the Chair.

Etiology and Spread of Typhoid Fever.

DR. VICTOR C. VAUGHAN, Ann Arbor, Mich., delivered an address on this subject, which appears in this issue.

Organization of the Medical Profession.

DR. J. T. MCANALY, Carbondale, Ill., president of the Illinois State Medical Society, in this address, said the time had come when medical societies must enlarge their scope of usefulness. Medical men are coming to believe that the scope of medical societies is too narrow. We can no longer ignore the material and social interests of the members, if we are to keep a compact organization. There are many subjects for medical societies to discuss other than strictly scientific matters, such as irregularities in practice, the best means of obviating them and the prosecution of offenders against the medical statutes.

Fifty Years of the Society.

DR. N. S. DAVIS, SR., gave brief reminiscences of the origin and growth of the society. He referred to two or three critical periods in its existence. He said, when the society was first organized, and during the three or more years of the beginning of its existence, the profession was in a condition of entire disorganization as far as harmony was concerned. There were more physicians in proportion to the population than there were now. One of them had a wide reputation for dealing in thunder and lightning pills, and some of the members of the profession devoted more time to dealing in real estate and politics than to the practice of medicine, consequently they could not be induced by any influence to pay any attention to the organization of the profession at that time, and they had to be left out. Of the rest, they were divided into factions, each group worked for its own end and fought the other groups. The most influential group was connected with a medical college that had been planted here, and there was a bitter enmity on the part of two or three of the minor groups against those that belonged to the college. After speaking of the different crises through which the society had passed, to show the way in which physicians were divided into warring factions when Chicago was young, he related the story of a man whose leg had been nearly torn off in a street accident. Several physicians of one clique had made preparations to amputate the limb where the accident happened, when another faction arrived and succeeded in driving the first lot away from the patient. Dr. Davis said there was less bickering and less enmity among members of the profession in Chicago to-day than in any other

city in the United States; he hoped that this good, cordial, liberal feeling one with another would be cultivated until the end of time.

He thought there was such a thing as having too many organizations, too many things to attend. He said he had heard of doctors in Chicago who were attached to so many hospitals that it seemed to him if they visited each one during the week they would accomplish nothing else. He urged the members of the profession to be a little cautious. If they wanted to accomplish the most there was in this life, they should select their field of labor and cultivate it, but not try to cultivate all the earth.

In closing, Dr. Davis said that his work was nearly over and he found that he could do only a little every day and then rest in his comfortable home and wait for the end of life to come. He was happy that he had lived so long and had seen the growth of the society from its small beginning to the present membership of between ten and eleven hundred.

DR. I. N. DANFORTH, one of the older members of the society, gave a number of reminiscences of the early days and the different methods of practice then in vogue.

DR. FRANK BILLINGS followed with remarks in which he paid an eloquent tribute to the late president, Dr. Christian Fenger. Among other things, he said that Fenger's knowledge of pathology made him a surgeon. He was not an operator. There was a distinction between a surgeon and an operator. Almost any physician could be an operator, but surgeons were few, and Fenger was one of them. He was a man who knew when a case was operable and when it was not and he did not operate unless the indications demanded it. He undertook the most difficult operation and never stopped when he once began. Although slow as an operator, his results were as good, if not better, than the most brilliant operators who have ever wielded the knife.

CHICAGO SOCIETY OF INTERNAL MEDICINE.

Regular Meeting, held March 31, 1902.

President, Dr. Edward F. Wells, in the Chair.

DR. CHARLES SPENCER WILLIAMSON read a paper entitled "Muscular Mitral Insufficiency," which will appear in THE JOURNAL.

The Prognosis and Treatment of Suppurative Pleurisy.

DR. E. FLETCHER INGALS read a paper with this title, giving an analysis of eighty-three cases taken from his own records and those of the Presbyterian and Cook County Hospitals.

The prognosis in empyema had always been considered unfavorable, and it became interesting to inquire how far this had been modified by the progress of surgery in recent years. Laennec, writing in 1826, conveyed the impression that very few cases recovered, either with or without operation. Alfred L. Loomis stated that the majority of empyemic children recover, while in adults, although for a time there is improvement, it seems that phthisis is almost certain to develop sooner or later. The essayist was unable to obtain accurate statistics of cases left entirely to nature, or to medicinal treatment, but all of the authors at his command agreed that if left to themselves nearly all die.

Operative treatment changes the prognosis decidedly, fatality now being the exception in uncomplicated cases that are properly treated early.

Puncture with a trocar through the canula in which a double tube was introduced and brought out with the end under water was recommended by Kussmaul in 1869. Without knowledge of Kussmaul's recommendatioi, Dr. Ingals has used this method in most of his cases since 1872; but for the past ten years he has employed a trocar so large that two drainage tubes, each with a caliber of three-sixteenths of an inch, could be passed through it. A tube of this size is so large that it obviates most of the objections which were properly urged against the tubes that were employed when this method was first introduced.

The advantages urged for the drainage tubes are that they enable one to secure free drainage and to wash out the cavity thoroughly, and if introduced through a trocar in the proper manner, they exclude air for ten or twelve days, during which time the lung will have expanded and the chest wall contracted to a great extent and adhesions will have taken place between the pleural surfaces, so as to diminish materially the size of the suppurative cavity.

After giving the statistics of numerous authors, Dr. Ingals states that of his own cases, all but one of which were operated on by introducing a drainage tube through a trocar, six were of less than four weeks' duration and all of these recovered; fourteen were of from two months' to three years' duration and of these only 9 recovered. In other words, 100 per cent. recovered in early cases, and only 64 per cent. in those of longer duration.

In pleurotomy difference of opinion exists as to whether it is better to make the opening small or large. If the pus has already escaped between the ribs and is burrowing under the skin, Wilson Fox recommends that a valve-like opening be made through the skin and the knife not allowed to penetrate the thoracic cavity, thus preserving nature's method. But under other conditions exsection of one or two ribs is desirable in order to scrape out the fibrinous deposit.

Of the 83 cases that he is considering, 41 were operated upon by exsection of a portion of one or more ribs, and of these only 12, or 30 per cent., recovered. Of those that recovered, 2 were in children, whom it has been shown usually recover under almost any form of treatment, and 4 were in those over 15 years of age, who had not been sick for more than a month when the operation was done. In 11 cases the disease had been present for several months, and of these 2 recovered, 2 were improved and 7, or 64 per cent., died.

Exsection of the rib is easily performed, and wherever the intercostal spaces are greatly narrowed by retraction of the chest, as when there has been perforation of the lung so that the pus has been continually escaping, this operation is the only one to be recommmended. In acute cases where retraction has not taken place, he believes that the introduction of the double drainage tube through a canula and the exclusion of air for several days after the operation very considerably improves the patient's chances for life, for although exsection of a rib is easy, the danger of secondary infection, especially through the cut ends of the rib, is considerable, and the operation is much more formidable than by the trocar.

Being fully convinced of the advantages of the operation by the trocar, he urged it in all suitable cases, which comprise nearly all of the empyemas in children and the great majority of cases in adults in whom the disease is not of more than two or three months' duration. In these 83 cases, which were taken in order without any selection, of those operated upon by the method he recommends, 70 per cent. recovered, while of those in whom exsection of a rib was done, only 30 per cent. recovered.

Dr. Ingals then gave the directions for the operation and the subsequent treatment at considerable length.

DR. EDWARD F. WELLS warned against the free use of peroxid of hydrogen in the chest cavity without free exit. He also mentioned an old case of left-sided empyema in which the spleen was greatly enlarged. One day in dressing the cavity and pressing over the spleen he noticed fluid pouring out of the opening freely; whereas, if he relaxed the pressure air entered. Applying an elastic bandage around the chest and forcing the spleen up a little, little was required to expedite a cure. In two or three weeks the cavity had closed because the surfaces were coaptated properly.

DR. JOSEPH M. PATTON said that the age of patients had a good deal to do with the mortality. Then, we must remember the cause of death in those cases which were due to general infection and embolism, causes which might act in various cases irrespective of the nature of the operation. In regard to the selection of the operation to be performed, too much stress could not be laid on the nature of the infection. He spoke of three or four cases that had recovered from simple aspiration. Some time ago he aspirated a boy the ninth time. He was aspirated twice afterwards; he saw the boy about a year subsequently and his recovery was perfect. However,

he did not think we could rely too much on aspiration. Surgeons thought that nothing would do short of exsection of a rib. He believed this to be good teaching in chronic cases, but not in acute, especially in pneumonic affections, as a large percentage of such cases could be cured by simple siphon drainage. He had drained three or four cases with single siphon drainage with satisfactory results. One of these patients, a child of 6 years, recovered in six weeks, and the loss of expansion on the affected side two years afterwards was less than one-quarter inch. He uses the single tube because he does not believe that in very recent cases of pneumococcus infection irrigation is necessary or advisable.

DR. WESSELS, of Cape Town, South Africa, expressed himself as being conservative with reference to operating on acute cases of empyema. Even before resorting to aspiration it was necessary to weigh the matter very carefully, lest one disturbed the condition of the patient. Operations which caused the prolapse of one side of the thorax by removing a number of ribs to close a chronic cavity which had existed for a long time were indicated in order to cure intractable cases of empyema; but in well-selected cases he thought aspiration would probably do as much good as the resection of one or more ribs.

DR. JOHN A. ROBISON said that prior to ten years ago he had performed the operation outlined by the essayist eleven times, and he reported 100 per cent. of recoveries.

DR. INGALS, in closing the discussion, said that his own experience had not been that many of the cases were tubercular. He did not recall any case, excepting that of an empyema, where there was pure pus that seemed to him to be tubercular. The cases that appeared to him to be tubercular were those in which he got sero-pus. He recalled that Dr. Bowditch told him of four cases he had had in which there was sero-pus, and all of these died. He recalled two of his own cases of a similar character, one of which died.

The suggestion of Dr. Wells not to use peroxid of hydrogen was timely. Personally, he had never used it. However, if a large opening was made, it might be used safely, but he had never tried it.

As to whether one should make the opening at the point nature usually selects or not, this was a matter of individual choice, and physicians and surgeons varied much in their choice. Some operators preferred to open near the angle of the ribs, others at the mid-axillary line, still others a little farther forward. He liked to make the opening on a line near the angle of the ribs, believing that better drainage could be secured.

Referring to aspiration, he thought it very important to resort to preliminary aspiration, not with the hope of curing the patient of empyema, but for the purpose of expanding the lung.

NORTHWEST MEDICAL SOCIETY OF PHILADELPHIA,

Regular Meeting, held April 1, 1902.

President, Dr. Wendell Reber, in the Chair.

Treatment of Heart Disease.

DR. I. NEWTON SNIVELY read a paper entitled "A Brief Consideration of the Scientific Treatment of a Few of the Diseases of the Heart," in which he laid great stress upon the importance of an individual study of the general condition of each patient showing cardiac lesions, especial attention being directed to the condition of the kidneys. In the author's opinion no heart medicine is needed if the myocardium is able to perform its work in a satisfactory manner, and more consideration should be given to the heart muscle than to the heart murmur. Among the most important therapeutic agents in the treatment of cardiac conditions are rest in bed, properly selected diet and the use of tonics to restore the blood to its normal condition. Physical exercise and light gymnastics were also stated to be of value in properly selected cases. In treating the acute infectious diseases the importance of preventing myocardial weakness by medicines tending to eliminate the poisons from the system was noted and as heart stimulants to be used in conjunction with rest, in cases where a weakness of the myocardium is manifest, strychnia, caffein, digitalis and alcohol were recommended.

DR. JUDSON DALAND opened the discussion and remarked upon the weak action of the heart in typhoid fever, directing particular attention to the fact that in these cases the ordinary symptoms of cardiac weakness are not present, the conditions making the greatest impression on the observer usually being the feebleness of the muscular element of the first sound, which is particularly important, not only as indicating the general condition of the myocardium, but also the condition of the circulation and acts as an important guide to general medication. Rest, properly arranged massage and Swedish movements were recommended to stimulate the flow of the blood in the veins and thus produce a balance of circulation.

DR. THOMAS H. FENTON believed much valuable information could be gained in cardiac and vascular conditions by the working together of the ophthalmologist and the clinician, the ophthalmoscopic observations revealing many conditions of the arteries and veins which are valuable adjuncts to the physician in the treatment of his patient.

DR. HOWARD S. ANDERS considered that the most important factor in the treatment of cardiac disease was the condition of the myocardium, which is also, in his opinion, one of the most difficult of diagnosis. Regarding hypertrophy and dilatation of the heart, he felt that while these two conditions usually occur in conjunction, yet the greatest difference in the apparent general condition of the patient is observed, depending upon which of the two is predominating. As a rule when hypertrophy predominates, the patient remains in fairly good health, while the reverse is true where dilatation is the predominant factor. Attention was called to the importance of making a thorough physical examination in all cases, and particular stress was laid upon the position and character of the apex beat, the area of heart dulness and the character of the sounds of the heart and, in the event of any of these conditions being discovered at a time when the patient is under treatment for some other disease, preventive measures were recommended.

DR. SAMUEL WOLFE considered many cases of dilatation due to malnutrition, and inclined to the opinion that in many instances the physician is too hasty in insisting upon the patient quitting his occupation and limiting the amount of exercise. While there are no doubt a considerable number of cases where these directions are necessary, yet the speaker felt that in a far larger majority it was of much more importance to prevent worry and regulate the diet and unless the lesions had progressed pretty far he did not think the physician was justified in ordering cessation of all work. Methodical muscular exercise should be carefully regulated by the physician. The use of cold baths is of value and the cold sponge baths can be employed to advantage in almost all cases.

DR. W. E. ROBERTSON reiterated the opinion that the most important factor is the condition of the heart muscle. He remarked upon the value of the position of the apex beat as an aid in diagnosis and recommended, to locate the normal apex beat, the use of a line dropped from the center of the clavicle, instead of the nipple line, which varies more or less according to the age, sex, and health of the individual. The importance of preserving the balance of circulation was thought to be especially illustrated in children, where the same symptoms of cardiac disease are not found as in adults. Failing compensation in adults is usually accompanied in its inception with some cyanosis and edema, while in children neither of these conditions is common and, if present at all, exists only to a slight degree, the predominating symptoms in the latter class of cases being progressive pallor and asthenia. The belief was expressed that the continued use of digitalis would in itself produce hypertrophy, a case being cited in which the patient had used this drug continuously for twenty years prior to his death, at which time the organ weighed two and one-half pounds. While the value of calomel in right-sided heart failure was not discounted upon, yet the speaker felt that better results would probably be obtained from the use of phosphates and the salicylates.

DR. JUDSON DALAND made a few remarks with reference to the anatomic condition of the heart in mitral regurgitation (non-inflammatory) secondary to dilatation and the discussion was closed by Dr. Snively, who urged upon the members the importance of improving the general condition of patients suffering from cardiac disease.

DENVER AND ARAPAHOE COUNTY MEDICAL SOCIETY.

Regular Meeting, held March 11, 1902.

Dr. George B. Packard, in the Chair.

Surgical Treatment of Chronic Nephritis.

DR. C. B. LYMAN, after referring to the scant literature on this subject, and especially to the papers of Dr. Edebohls, related the case of a patient who was well until the summer of 1900, when he began to have headache and loss of appetite. Edema of the genitals and legs followed, with puffiness under the eyes. In February, 1901, when admitted to hospital, he had attacks of vomiting and partial loss of vision. He was tapped four times for ascites and showed an enlarged liver and heart, with a mitral systolic murmur. Symptoms of uremic intoxication yielded to vigorous treatment. The urine contained albumen in large quantities, granular hyalin and fatty casts, free fat globules and epithelial cells in a state of fatty degeneration. The operation was performed February 21, 1902, and consisted of complete decapsulation of both kidneys. The stomach was washed out after the anesthetic (ether) was discontinued. Both kidneys were diminished in size by fully one-third. The capsule peeled off easily. The operation consumed one hour and fifteen minutes. Sixteen ounces of urine, containing no blood, were withdrawn per catheter during the twenty-four hours following the operation. The day following the operation the pulse and temperature rose and the patient died 56 hours after the operation.

The fatal termination of the case should not and will not deter him from operating on suitable cases. That the handling of the kidney does no injury was proven by the fact that the urine following the operation did not contain any blood. In the future he will endeavor to determine before the operation whether one or both kidneys are involved. This would in many cases obviate a bilateral operation. In connection with the subject he thinks two questions deserve careful consideration. The first is whether it is advisable to operate on both kidneys at the same time or whether it is not wiser to operate on one kidney at a time, allowing an interval of a month or more to elapse between the operations. The cases where cure was effected early, according to Edebohls, were those when the disease was unilateral. The second question is whether it is necessary to do a complete decapsulation or whether a sufficient collateral circulation could not be obtained by making a partial denudation, such as is made in nephropexy.

DR. T. M. BURNS exhibited a rare specimen of a fetal anomaly. The fetus was expelled six months after the patient's last menstruation. The fetus was 3½ inches long and was covered by the amnion as by tights. The deformities were many—a meningocele, talipes, absence of toes and all the abdominal viscera were outside the abdomen. There was no history of prenatal shock or of maternal impressions.

TORONTO CLINICAL SOCIETY.

Regular Meeting, held April 3, 1902.

Purulent Pericarditis and Empyema.

DR. K. MCILWRAITH reported three cases of puerperal septicemia treated with the antistreptococcic serum with one death.

DR. R. D. DUDOLF reported an interesting case of purulent pericarditis and empyema, with operation and recovery. This occurred in a boy of 7 years, who was admitted to the Children's Hospital with shortness of breath, cough, pain, lips cyanosed, extremities cold, but no edema. The abdomen was prominent, especially in its upper portion, and the umbilicus was protruded. Palpation revealed the lower border of the liver a finger's breadth below the umbilicus. The respiration was almost entirely thoracic. The cardiac impulse could not be detected at all. By the *x*-rays it was ascertained that there was an enormous collection of fluid in the pericardial sac which was interfering with the cardiac action. Dr. George A. Peters operated and over thirty-six ounces of fluid were taken away. The cyanosis disappeared rapidly, even before the patient left the operating table. The heart was not very much displaced. The empyema followed and was treated successfully in the usual way.

NEW YORK ACADEMY OF MEDICINE.

Meeting of the Section on Medicine, March 18, 1902.

Dr. James K. Crook, in the Chair.

Acute Articular Rheumatism—Its Pathogenesis.

DR. HEINRICH STERN made some remarks on this topic. He took the ground that the microbic theory of the origin of rheumatism was not based on clinical facts. Because of the old theory of the acidity of the blood in rheumatism he had accurately estimated the blood alkalinity in a number of cases and had found no marked deviations from the normal. Similarly the urine, though often vaguely called "highly acid," when examined by acidimetry showed the acidity to be close to the normal. Attention was directed to the fact that in acute rheumatism and in only one other disease, i. e., pneumonia, were the urinary chlorids decidedly reduced.

Symptomatology and Diagnosis.

DR. LEONARD WEBER said that the onset of acute articular rheumatism was sudden and the disease was often fully developed in twenty-four hours. Monoarticular rheumatism was very rare. In very well-marked cases anemia quickly developed. A soft cardiac murmur at the beginning was common and was not due to endocarditis but to the fever and anemia. If, however, the murmur persisted after defervescence, the patient should be kept absolutely quiet in bed for several weeks. Endocarditis should be looked upon as a part rather than as a complication of rheumatism. Gonorrheal arthritis is monoarticular and does not respond to the salicylates. Acute osteomyelitis might occur in several places simultaneously, and thus be mistaken for rheumatism. In atypical cases of gout, a search for deposits of urates about the joints would sometimes aid in the diagnosis.

Complications and Sequelae.

DR. FRANK W. JACKSON gave his own personal experience in this field. He said that the principal complications of rheumatism were hyperpyrexia, delirium, coma and convulsions, tonsillitis, bronchitis, pneumonia, meningitis, pleurisy and inflammations of the other serous membranes and inflammation of the kidneys. True hyperpyrexia, i. e., a temperature of 105 or 106 F. and usually fatal, was not frequent in this locality. Delirium in young rheumatic subjects was often due to the use of the salicylates. Coma and convulsions he had not seen. Acute rheumatic iritis was occasionally met with. While there was a distinct relation between throat inflammations and rheumatism he was not sure that they were a part of that disease. Rheumatic meningitis must be very rare, as he had not seen it. Rheumatic pleurisy was fairly common, and was generally of a mild type and characterized by its dryness or by the rapid formation of adhesions. In his own experience pericarditis had not been a very frequent complication of rheumatism. In making this statement he excluded cases having pericardial friction, due to a plastic inflammation between the pleura and the external layer of the pericardium. It was quite common in acute articular rheumatism for a heart murmur to be alternately audible and inaudible on different days. Careful and extended observation had convinced him that some patients absolutely recover from a rheumatic endocarditis.

Prognosis and Treatment.

DR. WILLIAM H. THOMSON took up this topic. He described rheumatism as a microbic infection running its course in about six weeks. The salicylates were chiefly useful in controlling the pain. He had found an antecedent tonsillitis in nearly 25

per cent. of his cases of rheumatism and hence he favored, as a prophylactic measure, the douching of the throat with peppermint water. To guard against relapse, the rheumatic patient should be clothed in flannel and lie between blankets. The modern use of the salicylates almost to the exclusion of the alkaline treatment he believed was responsible for a greater proportion of cardiac complications. He used aconite to quiet the heart, and cod-liver oil to improve the general condition, but considered iron mischievous in the anemia of rheumatism. He preferred the strontium salts to the salicylates.

DR. MORRIS MANGES was disposed to think that several germs might stand in etiological relation to rheumatism. He was of the opinion that more than 25 per cent. of cases were preceded by tonsillitis. The anemia was certainly very marked in rheumatism, but he had not found iron harmful. He was in the habit of using the organic preparations of iron. Many of the cardiac murmurs heard during an attack of rheumatism are hemic or myocardial, which explains the diurnal variations noted by Dr. Jackson. The best medicinal treatment for rheumatism was the use of the salicylates, together with the alkalies in sufficient quantity to keep the urine alkaline—often a difficult matter. Rest in bed during convalescence from rheumatism was of the utmost importance.

DR. S. BARUCH said that many of the disappointments with the salicylates arose from the use of too small doses. For some years past he had prescribed twenty-grain doses of pure salicylic acid from oil of wintergreen combined with ten-grain doses of bicarbonate of sodium, thus making the salicylate of soda extemporaneously. It was best to begin its administration at 4 p. m., and repeat at intervals of two hours until eighty grains have been taken. The drug should be given up to the point of producing a ringing in the ears, and if given only in the evening, the disagreeableness of the medicine would usually disappear during sleep. Locally, he made use of compresses of three or four thicknesses of linen wrung out of water at 60 F. and covered with flannel. They should be renewed about every two or three hours and were not usually required unless the temperature of the body was over 100 F.

DR. ABRAHAM MAYER said that while most physicians now believe in the bacterial nature of rheumatism, the specific germ was still unknown. He cited the experiments of Singer and Meyer in support of the view which he entertained, that rheumatism is caused by various germs. The impure varieties of salicylate often cause delirium, which is rarely true of the pure drug. With the latter he found it possible often to give 120 grains in the twenty-four hours without causing delirium. He had found iron useful.

DR. ANDREW H. SMITH said that he was accustomed to keep the urine of rheumatic patients alkaline by giving a mixture composed of equal parts of the acetate, bicarbonate and citrate of potassium. There was undoubtedly an intimate relation between tonsillar inflammation and acute articular rheumatism. A useful local application in acute articular rheumatism was made up of equal parts of guaiacol and glycerin. The patient should be confined to bed for some time after the temperature had reached the normal.

DR. LOUIS FISCHER, speaking of acute rheumatism in children, said that in his hospital cases of polyarthritis, 70 per cent. had developed heart complications and 11 per cent. of the cases had terminated fatally. The dietetic treatment was more important than the medicinal. The affected joints should be kept at rest by the use of bandages or splints. A 10 per cent. ointment of the salicylate of methyl applied to the affected joint would give relief in some cases. It was often useful to bathe the whole body of the child in water at 75 or 85 F., to which about two ounces of the sulphuret of potassium had been added.

DR. HEINRICH STERN said that the great number of bacteria found in connection with rheumatism tended to throw doubt upon the microbic theory. The salicylates act in rheumatism by increasing the osmotic tension of the blood.

DR. W. H. THOMSON said that he expected in the near future the announcement that Wassermann's bacterium had been demonstrated to be the ultimate cause of rheumatism.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Treatment of Gallstone Colic.

G. S. Eveleth, in *New York Med. Jour.*, states that, in the treatment of gallstones, the first indication is the relief of pain by means of morphin administered hypodermically. One should bear in mind, however, the possibility of a rapid discharge of the stone and the immediate relief from pain. The second indication is the prevention of subsequent attacks by giving attention to the hygiene and diet; by the use of medicinal agents and by the aid of surgery.

In order to favor the respiratory and circulatory acts and thus increase metabolism, the following is recommended by him:

℞.	Tinct. nucis vom.	℥iii	12
	Sodii salicylatis	℥vi	24
	Ext. xanthoxyli flu.	℥ii	60
	Elix. aurantii q. s. ad	℥vi	180

M. Sig.: One teaspoonful three times a day in water.

The nux vomica is given to increase the respirations and circulation, the sodium salicylate to increase the flow of bile, and the xanthoxylum for its tonic action upon the gastro-intestinal mucous membrane and to promote glandular action.

W. L. Heeve, in the same journal, states that biliary colic in mild form can always be relieved by the administration of 5-minim doses of a reliable fluid extract of dioscorea villosa every half hour in hot water. It may be given in the following combination:

℞.	Ext. podophylli flu.	m. xxiv	1 50
	Ext. dioscoreæ vil. flu.	℥iii	12
	Tinct. lobeliæ	℥ii	8
	Aquæ chloroformi q. s. ad	℥iv	120

M. Sig.: One teaspoonful every half hour.

The action of olive oil, while not a specific, from his experience may be relied upon only when the obstruction is at the diverticulum of Vater, given in combination with aromatics in order that it may be better borne by the stomach:

℞.	Olei cinnamomi	m. v	30
	Methyl salicylatis	m. vi	35
	Menthol	gr. ss	03
	Saccharini	gr. i	06
	Essentiæ anisi	m. xv	1
	Olei olivæ	O. ss	240

M. Sig.: At one dose.

When the obstruction lies in the cystic ducts the internal administration of one-quarter grain doses of podophyllin until one grain has been given is recommended.

[Dioscorea—colic root—is an unofficial preparation made from the rhizome of the plant. It contains an acrid resin, which is perhaps the active ingredient acting upon and stimulating the intestinal canal. It has been used in the past in the form of the fluid extract to relieve the cramps in cholera morbus, spasmodic hiccough, and biliary colic. But very few of the pharmacopeias speak of it at the present time.]

Bromipin in Epilepsy.

Dr. J. Wolff, in *Allg. Med. Centralzeit*, recommends bromipin in the treatment of epilepsy as a substitute for the bromids, because of the symptoms of intolerance and irritation of the stomach by the latter. According to his statement, bromipin did not so diminish the frequency of the attacks but was successful in lessening their severity. Also an improvement in the mental condition of the patients was very considerable. He gave to these patients bromipin in doses ranging from one and a half to six teaspoonfuls in the twenty-four hours. He observed no untoward effects from the drug. The functions of the body and the digestion were in no way disturbed by this treatment; on the other hand, the general nutrition of the patients were almost uniformly improved.

Lupus Erythematosus.

G. H. Fox, in the *Ther. Monthly*, recommends, where the patches are dry and scaly, an ointment or plaster of salicylic acid, gradually increased in strength until the inflammatory reaction is as great as the patient will tolerate. The following formula is recommended for local application:

R.	Acidi salicylici	gr. x	60
	Acidi pyrogallici	gr. xx	1 20
	Vaselini	ʒiii	12

M. Sig.: Apply locally once or twice daily.

Epilepsy.

In discussing the treatment of epilepsy, Bowman, as noted in in the *Ther. Month.*, states that every effort should be made towards preventing the first paroxysm. Prophylaxis directed toward rachitis or defective nutrition may be exerted through proper feeding. Careful treatment through the acute infectious diseases, and the regulation of diet will prevent infantile convulsions. Hygienic measures can not be too strongly enforced. The patient, indeed, should live by the clock. Meat as a food should be forbidden absolutely or given in very small quantities. Keep watch on the enormous appetite of the epileptic. Forbid the use of alcohol and insist on the use of cold baths. Operations on the cortex may be considered in a certain proportion of cases of partial or traumatic epilepsy, but in no cases which have existed over two years. The bromids are relied upon for direct treatment. Strychnin is of value. Beta-naphthol is recommended by him as the best intestinal antiseptic. He states, however, that salol may be advantageously used and that it has a tendency to prevent the bad effects of the bromids.

Scabies (Itch).

The following is Kaposi's formula for the treatment of scabies:

R.	Beta-naphthol	ʒiii	12
	Cretæ prep.	ʒiiss	10
	Saponis mollis	ʒiii	12
	Adipis	ʒvi	90

M. Ft. unguentum. Sig.: Apply locally at night.

Gonorrheal Urethritis.

The following combinations are recommended in the treatment of gonorrheal urethritis:

R.	Ichthargin	gr. ss	03
	Aquæ destil.	ʒiii	90

M. Sig.: Use in the form of an injection three times daily.

[Ichthargin is the sulpho-ichthyolate of silver. It is a brown odorless powder containing about 30 per cent. silver. It is soluble in water or glycerin, and is an astringent and bactericide.]

Internally the following is of service:

R.	Copaibæ	ʒii	8
	Salol		
	Pulv. pepsini, āā	ʒiiss	10
	Mucilag. acaciæ	ʒi	30
	Aquæ destil q. s. ad	ʒiv	120

M. Sig.: Shake and take one teaspoonful three times a day.

Cystitis.

Dr. B. Foster, in *St. Paul Med. Jour.*, states that, in the treatment of cystitis, when the urine is acid in reaction, the following preparation containing liquor potassæ is the most useful:

R.	Liquoris potassæ	ʒii	8
	Mucilaginis acaciæ	ʒi	30
	Tinct. hyoscyami q. s. ad	ʒiv	120

M. Sig.: One teaspoonful every four hours in water.

If the urine is already alkaline, and particularly if it has undergone ammoniacal decomposition, urinary antiseptics are indicated, such as salol, boric acid, sodium benzoate or urotropin.

Care of the Breasts in Nursing Mothers.

Dr. G. Barksdale, in *West. Druggist*, recommends in the treatment of tender nipples, that the nipple be painted over with glycerite of tannin and alcohol for several days. If they become fissured they should be painted with tincture of benzoin or boric acid solution. When the flow of milk is more than the child can use it is best to withdraw some of it to prevent pain to the mother. When the symptoms of abscess appear the child should be taken from the breast, the milk withdrawn and the tumors, produced by the overdistended ducts, should be masséed until they disappear; or the breast anointed with an ointment composed of camphor, opium, belladonna and lanolin. The pulverized jalup compound should also be given to secure free movement of the bowels and to promote diuresis. If the symptoms continue, use hot fomentations until the abscess forms and then open.

Enuresis in Females.

G. C. Parnell, as noted in the *Med. Standard*, in an extensive clinical practice has had occasion to treat many obstinate cases of enuresis in females of different ages. In an article in *Brit. Med. Jour.*, he reports five cases ranging in age from 9 to 18 years in which he applied a strong solution of silver nitrate to the neck of the bladder. Every case was benefited and one patient, 18 years of age, who had been a sufferer for ten years was permanently cured, and three of the others had only slight relapses. He used a wire dilator in applying the solution so as to reach the entire length of the urethra. No ointment or oil of any sort is used in its introduction. After the urine has ceased to flow a probe covered with cotton wool saturated with the solution is introduced between the blades of the dilator and applied thoroughly. The dilator is removed and again reinserted at right angles and the solution again applied to the surfaces. The strength of the solution should vary from gr. x (.60) to gr. 1 (.3) to the ounce (30) of water. Chloroform is not necessary, as the pain is not severe. The patient should be kept in bed for twenty-four hours and the application repeated in four or five days if necessary.

Medicolegal.

Employment of Surgeon by Trainmaster.—The Supreme Court of Mississippi says that the appealed case of the Southern Railway Company in Mississippi vs. Brister was brought to recover an agreed fee of $100 for services to an employe of the company. It seems that the employe, while engaged in the company's service, was run over by one of its trains and seriously and, as it soon proved, fatally injured. The company's station agent at the place where the accident happened sent a call to the surgeon who rendered the services, whose services in like cases the company had before refused to compensate. The surgeon informed the station agent that he would attend the injured employe if he would be responsible for the fee. The agent asked him to wait a little, and, as the court infers, placed the case before the trainmaster, who wired the surgeon to take charge of the case for the fee of $100, unless he was appointed the company's surgeon. The surgeon attended the wounded man, gave him all necessary medical attention and procured and paid for other necessary care and nursing, and after a few hours the patient died. The company not having engaged the doctor as one of its surgeons, he brought this action. The record disclosed the proof of the contract with the trainmaster for the payment of the $100, the performance of the surgeon's part of the contract and the breach by the company. It was also proved by a former employe that the trainmaster had authority in emergencies to employ a surgeon temporarily and that the trainmaster also acted under the superintendent and performed the duties of local superintendent, which evidence was not objected to or controverted. Besides, so far as the record showed, the station agent was the only officer of the company on the spot, and it is assumed by the court that the trainmaster was the next officer of authority within reach. Under these circumstances, and with it admitted that this trainmaster might perhaps employ a surgeon in an emergency, the Supreme Court is of the opinion that he had authority to bind the company, and that the contract made was valid and enforceable. However, it says that it is not called upon to decide whether, as train-

master he had authority to contract with the surgeon as he did; but, it says, inasmuch as at the time he was in the exercise of the functions of a division or local superintendent over that part of the road, it thinks it may be presumed that he had the power to so contract. From the fact that the company had surgeons in employ, though they were not in call, it infers that the company recognized its duty to employes injured in its service.

Privilege in Nebraska—Board of Health Records.—The Nebraska statute relating to witnesses and their competency contains the following provision relating to professional communications: "No practicing attorney, counsellor, physician, surgeon, minister of the gospel or priest of any denomination shall be allowed, in giving testimony, to disclose any confidential communication, properly entrusted to him in his professional capacity and necessary and proper to enable him to discharge the functions of his office according to the usual course of practice or discipline."—Code of Civil Procedure, Section 333. "The prohibitions in the preceding sections do not apply to cases where the party in whose favor the respective provisions are enacted waives the right thereby conferred."—Section 334. The rule in Nebraska, as well as in other states having a like statute, the Supreme Court of Nebraska says, in Sovereign Camp of Woodmen of the World vs. Grandon, is that the above sections protect a party against any disclosure by a physician made to him in the course of his professional employment, and necessary and proper to enable him to discharge his duty to his patient. Not only are such communications privileged, but whatever knowledge the physician may gain from observing his condition and symptoms is likewise privileged. There can be no doubt as to the rights of the patient, and the courts, in a proper case, are vigilant to see that these rights are fully protected. But the fact that a physician was called to attend a patient is not a privileged communication. A physician may testify that he was called to attend a patient and to the number and dates of his professional visits. Moreover, where, in an action between the representative of a deceased person and an insurance company, the former introduced in evidence, as a part of the cross-examination of the attending physician, a written statement, which the latter had given her at her request, to the effect that the deceased was not seriously sick until the evening previous to his death, the court holds that this constituted a waiver of her privilege on her part, and that the company should have been permitted to re-examine the physician as to the condition of his patient. A record kept under the ordinances of a city for the evident purpose of assisting the board of health in the conduct of the affairs of that office, the court holds, is not such a public record as to be entitled to admission in evidence to show the truth of the matters therein recited and especially should it be rejected as evidence when offered to establish a fact which would not be admissible against a part because of its privileged character. That a record of this character, reciting privileged communications, may be used in evidence against a party where the testimony of the physician making it could not be received, the court says, is a proposition so inconsistent with reason and natural rules of justice that it can not give its consent thereto. Besides, the requirement, for example, of a city ordinance that, before a burial permit is issued, there must be filed with the secretary of the board of health a certificate setting forth the cause and date of death, the duration of the last illness of the deceased, etc., the court says is a mere police regulation, and is not intended for the purpose of supplying the public at large with information upon which reliance may be placed in the business affairs of the community.

Damages for Injury to Physician's Business.—The Supreme Judicial Court of Massachusetts says that the case of Earle vs. Commonwealth was brought by a practicing physician to recover for damage to his business by the carrying out of the Metropolitan Water Supply act. The case was referred to a commission. It reported that he lived and had his office in West Boylston and had a practice which extended through that and some neighboring towns. The taking of land at West Boylston necessarily affected his business to a considerable extent. The questions of law arising on the report were reserved by one of the justices for the consideration of the full court. To begin with, the commonwealth contended that the material portion of the statute, if it applied to cases like this, in allowing damages, was unconstitutional. But the court pronounces it constitutional without stopping to consider whether the question was open, although it says that very likely the physician's rights were of a kind that might have been damaged if not destroyed without the constitutional necessity of compensation. Next it was contended that the physician was not an "individual * * * owning * * * an established business on land in the town of West Boylston" within the meaning of the statute. But a majority of the court does not see why not. It thinks the word "business" quite wide enough to include the practice of a doctor. As to the suggestion that the practice was not established on land in West Boylston, it says that it is true that a doctor can give advice elsewhere than in his office, and that in fact he does so to a greater extent than a shopkeeper sells his goods outside his shop. But no less than a shopkeeper a doctor usually has, as this one had, a locally established center to which patients resort, and from which he goes his rounds. There is even a certain amount of salable good will, as is made familiar to us by English law and literature as well as by an occasional case in our own reports. Then, the commonwealth demanded a finding or ruling that the physician's business was not decreased in value by the carrying out of the act, because of figures given for his income for the preceding year, and thereafter. But, the court says, the commission may have found, and for all that it can see, rightly, that the diminution of income before the date when the act should affect it was due to precautions taken by him in anticipation of the change and it is unable to see that the commonwealth's request should have been granted. If his business was within the protection of the act and was "decreased in value," damages were to be paid for "such injury," that is to say, for the actual decrease in value of that business, not for the decrease in the value of such elements in it, only, as admitted of being sold. The money value of his business could be estimated, even though absolutely personal to himself. Again, the court says that the damage theoretically would be the difference in value between the business as it had been and as it was left. Perhaps it might be reached by taking the difference in value between the business carried on as it was in West Boylston and a similar one carried on by the physician in the nearest available place, bearing in mind the effect of requiring all West Boylston patients to move. A request for a ruling that what the physician had earned as a specialist since his abandonment of his general practice could not be considered, the court says, went too far, though undoubtedly the evidence was not very important.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine (Philadelphia), April 5.

1 *The Function of the Army Medical School. George M. Sternberg.
2 *Notes on Some Diseases of the Kidney and Bladder in Infancy. John L. Morse.
3 The Use of Eggs as a Medium for the Cultivation of Bacillus Tuberculosis. M. Dorsett.
4 *The Surgical Uses of the Hair-pin. J. Torrance Rugh.
5 Report of a Case of Bacillus Aerogenes Capsulatus, Probably Invading the Body from a Gangrenous Lung; Gas Cysts in the Brain of a General Paralytic. J. D. Madison.
6 *A Contribution to the Etiology of Appendicitis. Arthur J. Patek.

Boston Medical and Surgical Journal, April 3.

7 *Angina Cruris (Intermittent Claudication) and Allied Conditions, Including Painful Cramps, with Remarks on the Importance of Examining the Pedal Arteries. G. L. Walton and W. E. Paul.
8 *Physiological Heart Murmurs Produced by the Electric-light Bath. Thomas Howell.
9 A Congenital Malformation. Seabury W. Allen.
10 Poisoning from the Application of Carbolic Acid to the Unbroken Skin. J. W. Wainwright.
11 A Case of Dermatitis Medicamentosa. William H. Robey, Jr.
12 The Sign of "Koplik" in the Diagnosis of Measles. Enrico Castelli.

Philadelphia Medical Journal, April 5.

13 The Relation of the Tubercle Bacillus to Pseudoleukemia (Sternberg's Disease). (To be concluded.) Joseph Sailer.
14 *Bacterial Purification of Sewage. B. H. Buxton.
15 *Light and Radiance in the Treatment of Disease. George G. Hopkins.
16 A Case of Bubonic Plague—Recovery. Thomas W. Jackson.
17 A Case of Thrombosis of the Left Internal Jugular, Subclavian, Axillary, Basilic and Median Basilic Veins, of Unexplained Origin. Charles J. Aldrich.

New York Medical Journal, April 5.

18 *On the Treatment of Fracture of the Anatomical Neck of the Humerus by the Aid of the Roentgen Rays. Carl Beck.
19 *The Differential Diagnosis Between Disease of the Gall-Bladder and Disease of the Vermiform Appendix; With a Report of Two Cases. James C. Kennedy.
20 *Pulmonary Embolism After Operations upon the Bladder and Prostate. Edward L. Keyes, Jr.
21 *Human Asymmetry. William S. Ely.
22 An Epidemic of Typhoid Fever in the Backwoods of Maine. E. F. Brush.
23 An Unusual Complication of Inguinal Hernia. A. C. Smith.

Medical News (N. Y.), April 5.

24 *Treatment of Acute Puerperal Sepsis from a Surgical Standpoint. Hiram N. Vineberg.
25 *Leucocytosis as a Point of Prognosis in Appendicitis. Henry M. Joy and Frederick T. Wright.
26 The Pneumatic Proctoscope. James P. Tuttle.
27 The Antirabic Vaccination at the New York Pasteur Institute During 1900 and 1901. George Gibier Rambaud.

Medical Record (N. Y.), April 5.

28 *Pathological, Therapeutic, and Clinical Notes on a Few Cases of Malarial Infection. J. Herbert Ford.
29 *The Influence of Suprarenals in Pneumonia. Ethan A. Gray.
30 *Plastic Operation for Restoration of the Sphincter Ani, with Report of a Case. Charles H. Chetwood.
31 *Unnecessary Antiseptic Treatment in Midwifery. Valentine Browne.
32 *What Can We Diagnosticate in Acute Appendicitis? Charles A. Elsberg.
33 Carbolic Acid Gangrene, with Report of a Severe Case. John G. Sheldon.
34 Tetanus: Recovery After Thirty-six Days. J. Burton Nowlin.
35 Report of a Case of Foreign Body in the Trachea. Walter W. Stebbins.
36 Are Seeds Potent Factors in the Production of Disease of the Vermiform Appendix? James C. Kennedy.

Cincinnati Lancet-Clinic, April 5.

37 Address, Cincinnati Obstetrical Society. Julia W. Carpenter.
38 Some Clinical Observations on the Treatment of Rheumatism. William Osenbach.

St. Louis Courier of Medicine, March 29.

39 Proteolysis: A Study into the Quantitative Work of the Chief Function of the Stomach. M. D. Schmalhorst.
40 Skin Grafting. John C. Morfit.

April 5.

41 Aphthous Stomatitis. F. Neuhoff.
42 Acute Rheumatism and Its Treatment. W. E. Thomas.

Medical Fortnightly (St. Louis), March 25.

43 *The Classification of Cirrhosis of the Liver. Arthur R. Edwards.
44 The Cervical Loop. Byron Robinson.
45 Ecthol in the Treatment of the Eruptive Fevers. Robert C. Kenner.

Pediatrics (N. Y.), March 15.

46 An Unusual Case of Subperiosteal Hemorrhage of the Orbit Following an Uncomplicated Delivery. Edgar S. Thomson.
47 *Cirrhosis of the Liver in Infancy and Childhood. Frank X. Walls.
48 Congenital Defect of the Penis: A. M. Vance.
49 A History of Six Vaccinations. J. M. Krim.

American Practitioner and News (Louisville, Ky.), March 15.

50 *Latent Malaria. George B. Young.
51 Skin Grafting, with Report of Case. J. T. Dunn.
52 Adenoids of the Pharynx. P. Richard Taylor.
53 Boro-chloretone, the New Surgical Dressing. Walter P. Ellis.

Virginia Medical Semi-Monthly (Richmond), March 21.

54 *Hemoptysis. Johnson Eliot.
55 *Syphilis Domestica. James T. Boutelle.
56 The Physiology of Proteids, with Its Bearing on the Dietetics and Treatment of Uremia. Greer Baughman.
57 The Physiology and Pathology of Metabolism. G. W. Drake.
58 Prophylaxis and Treatment of Puerperal Sepsis. Charles S. Webb.

Journal of Experimental Medicine (Baltimore), March.

59 Experiments on the Effects of Injection of Egg-Albumin and Some Other Proteids. Torald Sollmann and E. D. Brown.
60 A Contribution to Our Knowledge of the Action of Saponin on the Blood Corpuscles and Pus Corpuscles. G. N. Stewart.
61 Snake Venom in Relation to Hemolysis, Bacteriolysis, and Toxicity. Simon Flexner and Hideyo Noguchi.
62 On a Coccidium (Klossiella Muris, Gen. et Spec. nov.) Parasitic in the Renal Epithelium of the Mouse. Theobald Smith and Herbert P. Johnson.

American Journal of the Medical Sciences (Philadelphia), April.

63 *Cases Illustrative of the Localization of the Mental Faculties in the Left Prefrontal Lobe. Charles Phelps.
64 Brain Abscess in Typhoid Due to Bacillus Typhosus. R. W. McClintock.
65 Modern Mastoid Trephining Operations, with Notes on 100 Recent Operations. B. Alexander Randall.
66 Corrected Mal-union in Fractures of the Radius and Ulna of Both Forearms. Carl Beck.
67 *Albuminous Expectoration Following Thoracocentesis. David Riesman.
68 *Primary Tuberculosis of the Liver. Louis Frank.
69 *On the Association of Stone and Tumor of the Urinary Bladder, with Report of a Case. Edward C. Rosenow.
70 A Case of Stomatitis Gangrenosa (Noma). Louis Fischer.
71 *An Experimental Study of the Effects of Change of Color Upon Pigment Bacteria. Charles A. Oliver.
72 On the Effect of Severing and of Mechanically Irritating the Vagi. George W. Crile.
73 *An Experimental Investigation into the Causes and the Treatment of Diabetes Mellitus. Alfred C. Croftan.
74 *Present Methods of Treating Ureters Severed During Abdominal Operations. William R. Nicholson.

Indiana Medical Journal (Indianapolis), April.

75 The Society of the Lying-in Hospital of the City of New York. Nelson D. Brayton.

Canadian Journal of Medicine and Surgery (Toronto), April.

76 Transplantation of Ureters into the Rectum for Exstrophy of the Bladder, by the Author's Extra-peritoneal Method: Three Additional Cases. George A. Peters.
77 Sewage Purification. P. H. Bryce.
78 Pus in the Kidneys; Its Pathological Basis and Its Treatment. Thomas H. Manley.
79 Successful Treatment of Rheumatism and Renal Calculi. W. A. Young.

Ophthalmic Record (Chicago), March.

80 *The Treatment of Congenital Lens Displacement. L. D. Brose.
81 An Additional Case of Conical Cornea, in Which Vision Was Improved by Convex Cylinders. Cassius D. Westcott and Brown Pusey.
82 The Clinical and Pathological Report of a Case of Foreign Body Retained in an Eye for 26 Years. Burton K. Chance.
83 Curious Case of Ocular Infection from Dust from Nest of Mud Wasp, and a Case of Transplantation for Inverted and Shortened Eyelids. J. B. Taylor.
84 Syphilitic Ulcer of the Eyelid. Wm. Campbell Posey.
85 A New Ophthalmoscope Combined with Which There Is a Plane Mirror for Retinoscopy; Intended as a Pocket Instrument. Brown Pusey.
86 Simultaneous Paretic Mydriasis, Subluxation of the Lens, and Rupture of the Choroid, with Marked Involvement of the Retina; a Peculiar Form of Persistent Pupillary Membrane. A. Duane.

Clinical Review (Chicago), April.

87 *The Importance of Rickets in Girls from an Obstetric Standpoint. C. S. Bacon.
88 A Suggestion for Treatment of the Broad Ligaments in the Removal of the Uterine Appendages. E. C. Dudley.
89 Clinical Lectures Upon the Etiology, Pathology, Diagnosis and Treatment of Tumors. A. H. Levings.

Cleveland Medical Journal, February.

90 A Review of the Vital Statistics of Cleveland During the Last Decennium. H. E. Anderson.
91 How We Rid Cleveland of Smallpox. Martin Friedrich.
92 A Case of Hysteric Hemiparesis and Hemianesthesia with Bell's Palsy. T. L. Chadbourne.
93 Complications and Sequels of Cholelithiasis. M. Stamm.
94 The Medical Treatment of Cholelithiasis. John B. McGee.
95 Bacteriologic Observations Bearing on Promiscuous Expectoration in Cleveland. Bourdet G. Hannum.
96 A Case of Mitral Stenosis, Hour-glass Stomach, and Other Lesions, with Some Atypical Signs. M. J. Lichty.

Pennsylvania Medical Journal (Pittsburg), March.

97 *The Radical Cure of Hernia. Edmund W. Holmes.
98 Ludwig's Angina Complicating Typhoid Fever. Wm. Egbert Robertson and Chas. C. Biedert.
99 *Movable Kidneys: Their Effect Upon the Gastric and Intestinal Functions. Boardman Reed.

Buffalo Medical Journal, April.

100 *The Suprapubic and Vaginal Methods of Treating Pelvic Suppuration. W. R. Pryor.
101 *Comparative Merits of Vaccination—Old and New. John Hauenstein.
102 Pemphigus. J. W. Grosvenor.
103 Deviation of the Nasal Septum. Edgar A. Forsyth.
104 A Case of Mycosis Fungoides. Alfred E. Diehl.
105 Clinical Versus Bacteriological Diagnosis and Quarantine of Diphtheria. Wm. L. Conklin.

Medical Mirror (St. Louis), February.

106 *The Shock of Intra-abdominal Operations: Its Etiology, Prophylaxis and Treatment. Lewis S. McMurtry.

St. Louis Courier of Medicine, April.

107 *Concerning the Antistreptococcus Serum. Robert Leudeking.
108 *The Variation in the Production of Free Hydrochloric Acid in the Infant Stomach from Various Foods. A. S. Bleyer.
109 *Diphtheria Treated with Antitoxin and Pilocarpin. E. W. Saunders.

110 *Problems in Infant Feeding. John Zahorsky.
111 A Perforated Meckel's Diverticulum. Robert Leudeking.
112 Enterorrhaphy by the Connell Suture. Louis Rassieur.

Merck's Archives (N. Y.), March.

113 The Last Stand: Practical Therapeutic Resources. Joseph Byrne.
114 Addison's Disease—As Affected by Suprarenal Extract. H. A. Moody.
115 An Index of Diseases Alphabetically Arranged with Their Modern Treatment. G. Bjorkman.

Medical Standard (Chicago), April.

116 Practical Dietetics. A. L. Benedict.
117 A Surgical Clinic. Nicholas Senn.
118 The Commoner Diseases of the Eye—How to Detect and How to Treat Them. Casey A. Wood and Thomas A. Woodruff.
119 Pain and Its Indications—Neuralgia. Edward C. Hill.
120 La Grippe. W. B. Parsons.

Western Medical Review (Lincoln, Neb.), March 15.

121 Medical Societies as Viewed from a Social, Scientific, and Legislative Standpoint. E. E. Levers.
122 The Operative Relief of Impaired Function of the Elbow-Joint, Due to Faulty Reattachment of a Separated Internal Humeral Epicondyle. Gilbert G. Cottam.
123 Cholelithiasis. E. F. Root.
124 Stab Wound of Gravid Uterus—Recovery of Mother and Child. Report of a Case. Voorhees Lucas and N. McCabe.
125 *A Contribution to the Surgery of Spina Bifida. Van Buren Knott.
126 A Few Observations Concerning Enteric Fever. G. G. Verbyck.
127 Some of the Relations of the Physician and Laity. J. L. Wicks.
128 Plea for a Better Practice in Holding Coroner's Investigations. W. C. Burke.
129 Diphtheria. W. A. Wyman.

International Journal of Surgery (N. Y.), March.

130 *Some Points in the Diagnostic Palpation of Prolapsed Kidney. Augustin H. Goelet.
131 Cancer of the Breast. R. H. Moss.
132 Nose and Throat Work for the General Practitioner. (Continued.) George L. Richards.
133 *Practical Suggestions on the Treatment of Rectal Diseases. James P. Tuttle.
134 The Surgical Assistant. Walter M. Brickner.
135 Fibroid Tumors of the Uterus. A. E. Spohn.
136 Recurrent Malignant Disease of Testicle. A. Carter Weber.
137 Ruptured Tubal Pregnancy: Delayed Operation: Death. Howard Crutcher.
138 A Case of Strangulation of the Bowel in a Slit in the Mesentery. J. E. Miller.

Southern Practitioner (Nashville, Tenn.), April.

139 The Clinical Variations of "La Grippe." W. C. Welburn.
140 Albuminuria. Louis LeRoy.

Brooklyn Medical Journal, April.

141 Correcting Speech Defects. Olive E. D. Hart.
142 Some Cases of Supracondyloid Fracture of the Humerus (with X-Ray Illustrations). Alwin H. Schwab.
143 The Removal of Foreign Bodies from the Ear, Nose and Throat. Stephen H. Lutz.
144 The Influence of Acute Disease upon Insanity. D. Ed. Warren.
145 Diagnosis in Abdominal Lesions. Thomas H. Manley.

Carolina Medical Journal (Charlotte, N. C.), March.

146 Cancer Cases—Reported to Illustrate Method of Diagnosis and Technique of Surgical Treatment. Stuart McGuire.
147 Address, Tri-State Medical Society of the Carolinas and Virginia. I. N. Upshur.
148 A Few Abdominal Operations on Women. R. S. Martin.
149 Suggestions on the Treatment of Inflammatory Conditions of the Air-Passages. A. L. Leatherman.

Medical Examiner and Practitioner (N. Y.), March.

150 The Stigmata of Degeneracy in Relation to the Medical Examiner. Eugene S. Talbot.
151 The Bearing of Alcoholic Stimulants in Medical Selection for Life Insurance. A. B. Bisbee.
152 A Case of Fulminent Appendicitis with Unusual Complications: (*a*) Post-Operative Ileus, and (*b*) One Week Subsequently a Pyo-thorax: the Pus Perforates the Lungs and Is Discharged Through the Bronchial Tubes: Resection of the Seventh Rib and Insertion of a Drainage Tube. Talbot Jones.
153 Fresh Blood Examinations. Robert L. Watkins.
154 Observations on Adrenalin Chlorid. F. W. Frankhauser.
155 Monograph of a Stimulant, Sedative, Antispasmodic Expectorant. M. E. Chartier.

Medical Times and Register (Philadelphia), March.

156 On the Significance of Symptoms and Signs in Disease. Thomas H. Manley.

1.—See abstract in THE JOURNAL of April 12, p. 950.

2. **The Kidney and Bladder in Infancy.**—Morse has investigated the condition of the urine in every baby admitted to his service at the Infants' Hospital, Boston, for the last two years, as well as many in private practice. While his results are by no means complete, he thinks they are of importance. The first urine of the newborn is acid, almost always clear, of rather low specific gravity and contains small quantities of albumin, often persisting for a couple of weeks and not infrequently for two months. He doubts whether any explanation offered for this has been correct. It is hardly sufficient to consider it physiologic, however, until more is known about the metabolic aspects in the newborn. In any case it is not a serious condition and should not be looked on as the forerunner of nephritis in later life. The evidences of uric acid infarction are present soon after birth and are found in more than 40 per cent. of the autopsies of the first week or two of life. In infancy the odor of the urine is slight, the color pale, and it is frequently turbid from mucus. The reaction is acid, with specific gravity as low as 1003 to 1008 for the first three months. The urine of breast-fed babies almost never contains indican and that of the artificially-fed baby only slight traces. Urobilin is never present in the breast-fed and seldom in the other. Albumin is absent and sugar is not found with the ordinary reagents. The sediment is slight and consists almost entirely of cells. The quantity of urine is usually large. Hematuria is found in infancy under the same conditions as in adult life. Acute nephritis may occur and the author feels certain that it is more frequent than generally supposed. It is difficult to say what influence it may have on the future of the child. The enormous reparative powers of the infants' tissues would make it probable that its power of harm is less than in adult life. A distinction must be made between the primary and secondary forms. His experience has been that while primary nephritis is seldom recognized, other conditions are not infrequently mistaken for it. Edema develops in many other diseases, but examination of the urine will prevent mistakes. As regards secondary nephritis, it complicates the eruptive fevers of infancy, as in childhood, but seems to develop more commonly in the pneumonias of infancy than in later life. He thinks it would be found more frequently in influenza if the urine were examined. The enteric diseases have been more studied than others, but he has found evidence of renal involvement in only 15 per cent. out of a series of 70 cases which he had investigated. Nephritis may occur also as a complication of eczema and suppurative ear disease, also from rickets, anemia, etc. Chronic nephritis is necessarily rare and where it occurs, heredity seems to be of etiologic importance. He has seen but a few cases. Acute pyelitis and pyelonephritis are not uncommon. A short time ago 2 of 18 babies in his service were found suffering from them. The secondary form is more common and the type usually mild. Primary cystitis is uncommon and usually not severe, but secondary cystitis is very common, and occurs in a great variety of cases. It is usually mild in type, but may be severe, and is rarely the result of upward extension of vulvovaginitis or urethritis. Both the primary and secondary forms are almost always due to the colon bacillus. The most usual source of invasion is probably the rectum. The symptoms of the primary forms are fever, restlessness and colicky pain and are easily misinterpreted. The diagnosis can be made only by examination of the urine. The symptoms of the secondary form are presumably the same. They are usually masked, however, by those of the primary disease. He says, in conclusion, that his experience leads him to believe that diseases of the kidneys and bladder are not at all uncommon in infancy and that the examination of the urine will render a diagnosis possible in many doubtful cases and throw light on many obscure symptoms. It is not enough to examine the urine only in cases in which diseases of the urinary organs are suggested, because the symptoms of these conditions in infancy are not only almost never characteristic, but usually misleading. It should be examined as a routine procedure, otherwise most of these cases will be missed, and diseases of these organs will continue to be as uncommon in the future as they have been in the past. If it is examined as a routine measure he feels sure there will be a very sudden increase in the frequency of these diseases, an increase, however, apparent rather than real.

4. **Surgical Uses of the Hairpin.**—Rugh describes the uses of the hairpin in surgery. It is serviceable to hold the hair

away from the shoulders and neck during an operation; to pin on bandages; to remove concretions or foreign bodies from any sinus, natural canal or opening. As a dull curette he thinks it of value and the points may be employed as an esthesiometer. It may be also utilized to catheterize the female by the insertion of the rounded end. If the points are bent slightly outward the danger of its slipping into the bladder will be obviated. It is also useful to run under a blood vessel with a figure-of-eight ligature, and the blunt ends make compression and prevent hemorrhage. It can also be employed to close wounds by running the arms through the tissues, on each side and then fastening the ends, thus keeping the skin edges compressed together in approximation. It can be employed also as a caliper or compass. Straightened out it can be used as an applicator; as a probe; to wire wounds together; to rupture the membranes in labor, and when heated, as a cautery; as harelip pins; to sound a child for stone in the bladder; as a hook to extract foreign bodies; and as a tenaculum. Bent or twisted, it can be used as a nasal speculum; as a retractor; as an aneurysmal needle; in lieu of the tracheotomy tube; as a drainage tube; and to approximate wounds. The illustrations give the different methods of its use.

6. **Appendicitis.**—From a number of cases here reported Patek calls attention to the forms of appendicitis having origin in an affection derived from some other part of the gastro-intestinal tract and urges vigorous action in such cases. He comes to the following conclusions: 1. Because of its anatomic characteristics and relations the appendix is an organ of lower vitality and less resistance than are other parts of the intestinal tract. 2. Micro-organisms are normally present in the intestine, and await but an opportune moment when, in the presence of irritating secretions, they may excite an inflammatory reaction. 3. While appendiceal inflammation may undoubtedly originate *de loco*, there is no question but that in many cases the appendiceal inflammation is a secondary infection, the primary focus being in the intestine proper, the result of an acute indigestion or a catarrhal inflammation. 4. While we can rarely make the positive assertion that a disease has through our efforts been aborted, he believes that prophylaxis is the price of health and that it may even be possible to do much toward the prevention of attacks of appendicitis, especially in the case of patients who have previously suffered, by careful attention to the regulation of diet and intestinal habit in health, no less than in securing good intestinal drainage and antisepsis in the various gastro-intestinal illnesses.

7. **Intermittent Claudication.**—Walton and Paul report a number of cases of this type and are inclined to believe arterial disease an important factor. They make suggestions also illustrated by cases, that some of the paroxysmal pains of degenerative spinal diseases—for example tabes—may be allied to this condition and have a peripheral rather than a spinal origin. Their conclusions are given as follows: 1. The concurrence of the paroxysmal pains of angina cruris with pulseless pedal arteries is too constant to be explained by coincidence, though it is true that pulseless arteries may be found without the pains, and, conversely, that such pains may appear with apparently normal arteries. 2. The painful paroxysms are probably of vascular origin, and result from vascular spasm coupled, perhaps, with increased blood pressure acting on vessels already partially occluded, whether from local or general disease (aneurysm, syphilis), from senile changes (atheroma), or from congenital tendency to angiofibrosis. 3. Recurring painful cramps of constant seat probably represent a modified form of angina cruris. 4. It is important to examine the dorsalis pedis and posterior tibial, as well as the radial and temporal arteries, in all cases in which it is desirable to estimate the bearing of the vascular condition upon disease in the central nervous system or elsewhere.

8. **Physiologic Heart Murmurs.**—Howell has experimented with a number of patients to determine the cause of murmurs produced in them after the use of the electric-light bath. Of the 22 carefully collected cases of males only one had an organic murmur, and only one a functional murmur prior to the bath. This was in a nervous but otherwise healthy man. Out of the 22 there was only one in whom the murmur was not produced by the bath. Of the 29 females a larger proportion had organic and functional murmurs, 12 in all. In only one of all these did he fail to hear a murmur after the bath; in this case the bath was short, and this was probably responsible for the failure. He speaks of the causes of functional non-organic murmur, and has come to believe that anything that causes the heart to act rapidly and forcibly, especially where arterial tension is reduced, will frequently produce these murmurs, therefore heart disease may be wrongly diagnosed when conditions are present which may thus excite the murmurs. He says in conclusion, "given a condition of temporarily dilated aorta and a vigorously acting heart rapidly forcing the blood through a relatively narrow aortic orifice, it seems reasonable to suppose that vortices should form as the blood enters the artery, and that they in turn should produce the sounds we term murmurs."

14. **Sewage Purification.**—Buxton describes the methods of sewage purification, more particularly the septic tank system. The different processes are tabulated and the septic tank method recommended as best meeting the difficulties, especially the Cameron system, which seems to be largely employed throughout Great Britain, the Scott-Moncrieff plan being only exceptionally in use.

15. **X-Rays in Carcinomatous Growths.**—This third article by Hopkins gives the general facts of the effect of these rays on diseased cell growth. The author has come to the conclusion that the larger proportion of these growths can be absolutely controlled, and he favors the soft tube for this kind of work, and the static machine as a source of electric energy. His turn, he says, may come for burns, but it will not be for want of precaution; he thinks they can be avoided if necessary care is taken. Lately he has been treating inoperable cases of uterine cancer with considerable success and has had gratifying results in hemorrhagic cancer of the uterine neck and vaginal walls, employing the Finsen light as well as the *x*-ray. He prefers in these cases the hard tube as it has to its credit more injuries to the deep tissues, and therefore penetrates more deeply. The use of an aluminum screen he considers dangerous, as it leads to recklessness from a sense of false security. One of the most satisfactory fields for this work is recurrent cancer after amputation of the breast, and this has given him the most satisfactory results. When ulceration has not occurred in these breast cases, nearly every case will yield to treatment without the destruction of the superimposed skin. Where the skin has been destroyed over the region of disease the ulceration will heal promptly. Gastric carcinomas require the greatest amount of care and judgment and it is better to err on the side of the short exposure. The offensive odor, especially in face carcinomas, is quickly relieved and the *x*-ray has worked marvels in cancer involving the tongue where speech has been lost and swallowing has become so difficult that rectal enemata were required to support the patient. He has had one case where amputation of the tongue was decided on as the growth was closing both the trachea and the esophagus, that yielded to the combined use of the Finsen light and the *x*-ray. After five treatments in three weeks the patient was able to eat solid food and had regained speech.

18. **Fracture of the Humerus.**—Beck reports a case with skiagraphic illustrations. The diagnosis without these would have been erroneous, and he recommends it as a practice for a surgeon to draw a sketch of his diagnosis and see how the skiagram supports it. In the case reported he had to move the arm to fit the smaller fragment and fixed it in extension from the shoulder for two weeks. In seven weeks the function of the arm was perfectly restored.

19. **Appendicitis and Gall-Bladder Disease.**—Kennedy reports several cases diagnosed as appendicitis, one of which turned out to be gall-bladder disease and another biliary colic followed by symptoms suggesting biliary trouble, proving to be appendicitis complicated by a large concretion resembling a gallstone. He thinks that when very similar symptoms are

present in both diseases, the ailments of the appendix too often get the benefit of the doubt.

20. **Pulmonary Embolism.**—Ten cases have been collected by Keyes which seemed to belong to this class, two of which were verified by autopsy, and two more by prima facie symptoms of embolism, and may be classed as probable. Four were possible examples and two that he mentions are improbable. He calls attention particularly to the possibility of this accident from operation for prostatic disease and suggests that it is a real element in the prognosis, and that the sooner it is realized the better. Any tearing, cutting or burning of this organ must assuredly cause a certain amount of vesical thrombosis with its associated inflammatory reaction, and when the sluggish portal circulation is considered, the wonder is not that thrombosis should be frequent, but that it should be rare. Add the shock of the operation upon the vitality of an old man, the inevitable uremia for the first few days, and the wonder grows that embolism should not more frequently result. Perhaps it does result more often than we think. He asks the following questions: Is it frequent or not? Are we confronted with a danger we can not meet or will means be discovered to prevent it? Is thrombosis encouraged by the rough torsion of the rongeur? Is it due to infiltration following Bottini's operation? Does it ever extend from the gland itself or is it due to injury of the periprostatic plexus? Are phleboliths concerned in its production? Are there any signs by which it may be recognized and means by which it may be prevented? These questions naturally present themselves, but he can not answer them.

21.—See abstract in THE JOURNAL of February 8, p. 413.

24. **Puerperal Septicemia.**—The points upon which Vineberg lays special stress are: 1. Every case of puerperal sepsis is a wound fever or a wound infection and should be treated as such. 2. Each case of puerperal sepsis, however slight, should be carefully watched from the onset. We can not tell into what it may develop. 3. When a case of uterine sepsis progresses unfavorably after curetting, irrigation and proper general treatment, as evidenced by the pulse, temperature and the conditions of the uterus, we are justified in opening the abdomen and removing the uterus unless we find some conditions outside of the uterus to account for the persistence of the sepsis, or some condition in the uterus itself, as a single intramural abscess or a localized gangrene, which would admit of removal without ablation of the whole organ. 4. When a uterine infection extends to a tube or ovary, setting up a violent grade of salpingitis or ovarian abscess, the abdomen should be opened without delay and the affected tube or ovary removed. 5. When a uterine infection sets up a septic peritonitis the abdomen should be opened and the uterus ablated, the peritoneal cavity flushed with saline solution and free drainage employed through the vaginal opening. 6. To operate for these conditions, when the patient is evidently moribund, is unjustifiable and can only discredit the profession.

25. **Leucocytosis in Appendicitis.**—The value of the leucocyte count as a point of prognosis in appendicitis is insisted upon by Joy and Wright. They do not depend on it for diagnosis, but as a symptom of the severity of the disease. They summarize their views as follows: 1. The leucocyte count is a valuable aid to prognosis in appendicitis. 2. This is distinct from its diagnostic value. 3. A high stationary, or an increasing, count indicates a morbid condition of increasing severity which demands operation, no matter what the clinical symptoms may be. 4. A low stationary or decreasing count indicates that the severity of the case is abating and that operation may be safely postponed. Cases in which a falling count is accompanied by unmistakable signs of a generally bad condition form the rare exception to this second principle, and in them there is no chance of error. 5. No arbitrary set of prognostic values to be assigned to various degrees of leucocytosis can be constructed. The important point is to follow any scheme in which one learns to have confidence, provided the essential principle be preserved. 6. The count indicates when operation should be performed for the best interests of the patient. 7. Circumstances often render it desirable to postpone operation in appendicitis. Study of the blood-count enables it to be determined whether this may be done with safety and often renders such postponement permissible.

28. **Malaria.**—Ford reports cases simulating appendicitis, broncho-pulmonary disorder and typhoid fever, and calls particular attention to the unclassified fevers of the tropics leading to mistakes in diagnosis. He considers that in these occur the greatest amount of errors and that they offer the greatest opportunity for investigation.

29. **Suprarenal Extract in Pneumonia.**—Gray recommends and reports cases of the use of suprarenal extract in pneumonia which seem to have, according to his accounts, excellent results. He thinks we have in it the most favorable heart stimulant, which we are at liberty to use in the presence of heart failure impeding the pulmonary circulation as in pneumonia with coexisting renal inflammation. He has noticed a peripheral increase of the blood pressure in a few cases, but this was not permanent.

30. **Artificial Sphincter Ani.**—Chetwood reports a case where a sphincter was apparently destroyed by injury, and, though eight or nine operations had been performed to endeavor to restore the continuity, it was still unsuccessful. He made a large semi-circular incision with its convexity in the direction of the coccyx, from a point about one inch in front of the anterior limit of the anus, on a line, externally, with the tuberosity of the ischium on one side to a similar point on the opposite side, and then turned down a flap. He next dissected out a ribbon-shaped piece of muscular tissue about one and one-fourth inches in breadth on each side from the glutei muscles, leaving an attachment above. Then transposing them, he crossed the lower ends each to the opposite side, underneath the ligamentous connection between the anus and coccyx, encircling the rectum and fastened them with sutures of chromicized catgut. The finger in the rectum now recognized the constriction formed by this arrangement. The flap dissected away was sutured back again in place and the operation was a perfect success.

31. **Antisepsis in Midwifery.**—Browne protests against the use of douches, believing that bichlorid may produce toxic effects and that the natural secretions are antiseptic. In his experience of 26 years he has had 6 cases of puerperal fever, 3 of them treated by strict conformity with the antiseptic method, of which 2 died, and 1 recovered, and 3 treated without antisepsis, with 1 death and 2 recoveries. His results in obstetrics are generally much better without the douche than with it. He also speaks in favor of the use of ergot for expediting labor when the pains have become feeble and the os is completely dilated.

32. **Appendicitis.**—The diagnosis of appendicitis is discussed by Elsberg, who believes we can best diagnose the locality of the disease by the following method: Ask the patient to point the finger quickly at the spot where there is the most pain without looking at the abdomen. Repeat this proceeding a number of times until you are certain that the right point has been obtained. Then the course of the appendix will lie between the base of the organ and this point. Where no mass can be felt in the region it is impossible correctly to diagnose a perforation or gangrene. Where the mass can be felt and persists longer than two or three days without diminishing in size or indeed even increasing, it always has pus for a nucleus. When the mass is to be felt by rectal examination it means an inflamed appendix partially in the pelvis, or a secondary abscess, adhesion in Douglas' pouch, or a gravitation of fluid into the pelvis. One can not lay down fixed rules for the conditions of the general peritoneal cavity, but the author is inclined to believe in rigidity as one of the most striking features. The differential diagnosis between appendicitis and other diseases is generally easy. Occasionally gall-bladder disorder, torsion of the omentum, new growths in the intestine, intestinal obstruction, an affection of the female adnexa, or reflected pain from thoracic disease may make it difficult. The frequency of appendicitis must be kept in mind and that it occurs most fre-

quently in late spring and summer months. The severest cases occur in the large cities. No fixed rules can be laid down for appendicitis. Sometimes the severity of the disease is not in sufficient proportion to account for the symptoms. Sometimes the local symptoms are slight and the general intoxication severe. We have to depend on the pulse, pain, temperature and other symptoms as indications of the severity of the disease and of the treatment to be followed.

43.—See abstract in THE JOURNAL of February 22, p. 529.

47. **Infantile Hepatic Cirrhosis.**—This is a rare condition, according to Walls, affecting male children more than female, and with alcoholism in about 20 per cent. of the reported cases and syphilis in about 10 per cent. as an etiologic factor. Tuberculosis is a relatively frequent causative factor. Chronic sepsis has been noted as a cause and acute infectious diseases have been considered as potent causative excitors, though not unequivocally connected with acute instances. He describes the symptoms, the gastro-intestinal disorders that usher it in, icterus, ascites, venous stigmata on the face, hard, large and readily palpable liver, etc. The diagnosis is not always easy, as some of the symptoms in the adult may be lacking and some other infantile diseases like chronic peritonitis have a somewhat similar symptomatology. A large liver and spleen, icterus, suggillations of the skin, hemorrhages from the mouth and intestinal tract, and the presence of free fluid in the peritoneal cavity would indicate this disorder. The prognosis is unfavorable and the course rapid. If we could anticipate the disease before it comes on much might be done, but therapy thus far has been ineffective.

50. **Latent Malaria.**—Young understands by this term a condition in which, following an infection differing in no ascertainable respect from one producing malarial symptoms in the usual time, clinical manifestations are absent, or are delayed for weeks, although the parasites may be more or less constantly present in the circulation and follow (as far as can be determined) their normal intracorporeal life-history. He groups these roughly into two classes: 1. Cases of long incubation followed by an outbreak without an apparently immediate exciting cause. 2. Those where there are, so far as can be seen, no clinical manifestations, or if they do occur their onset seems to be determined by some existing cause entirely independent of the malarial infection. The hypotheses that the parasites lie dormant in the spleen or bone marrow, or that they multiply so slowly that they fail to produce a febrile reaction, are not fully accepted by him and he thinks that, under certain circumstances, the apparent dormancy of the parasites may be due to their following, under the influence of conditions not at all understood, an entirely different life cycle. He gives his reasons for this belief and calls attention to the clinical importance of the condition, suggesting that in any section where malaria is endemic we should not be satisfied in obscure cases of illness of any character, from hysteria to dyspepsia, until we thoroughly examine the blood.

54. **Hemoptysis.**—The importance of pulmonary hemorrhage is insisted upon by Eliot, who quotes Stricker's investigations to show its significance as a premonitory indication of tuberculosis. He notes that most persons have temporary improvement following the arrest of hemorrhage and gives details of the treatment.

55. **Syphilis Domestica.**—Boutelle's paper reports several cases of syphilis occurring in persons in whom it would not be suspected. He thinks we should not be blinded to the existence of this condition by respectability, refinement, innocence or purity of life, as they are not always safeguards.

63. **Localization of Mental Faculties.**—The cases reported by Phelps are those of injury or tumors of the left frontal lobes in which decided mental symptoms existed, while in others of the right frontal lobe, the mental functions were far less affected and often unimpaired. He reviews the literature and finds in every case but two (in which consciousness was retained and the mental faculties were not perverted by general delirium) that the laceration involving the left frontal lobe was attended by default of intellectual control, and that the lesion is usually, if not always, of the prefrontal region implicating either its superior or inferior surface. Subcortical disintegration, or deep or extensive laceration of the cortex, was specially characterized by abrogation of mental power, and superficial laceration by aberration in its manifestations. Of the two exceptional cases, in one the final coma occurred within two hours after injury and it might, therefore, be excluded; the other one was exceptional only in being regarded as normal for one day in which the patient emerged from a general condition of stupor. The abrogation of mental power seems to be proportionate to the extent of the lesion rather than to its situation in the prefrontal region. In every case where laceration was confined to the right frontal lobe the mental faculties were unaffected, except as they were obscured by stupor or delirium occasioned by coincident general lesion. Compression or contusion of the left lobe only exceptionally produced specific intellectual disturbance. There are also many cases unverified by necropsy and, therefore, debarred in evidence which he thinks are scarcely less convincing.

67. **Albuminous Expectoration.**—Tapping of the chest for the removal of fluids is ordinarily so safe that the idea of serious accident, as Riesman remarks, rarely enters the physician's mind. That such accidents may occur, however, is important and Riesman reports a case and finds others in the literature. The expectoration was carefully analyzed and the theories of the phenomenon of albuminous expectoration are discussed. The following are the author's conclusions: "1. Albuminous expectoration is a very rare complication of thoracocentesis. It is usually serious and sometimes fatal. 2. It consists in the expectoration of a viscid albuminous fluid closely resembling the fluid of serous effusion. 3. The condition is best explained on the basis of an intense congestion and edema of the lungs (congestion by recoil). 4. The principal cause seems to be either too rapid or too great a withdrawal of fluid. 5. Serious cardiac disease and morbid conditions of the opposite lung, hindering expansion, are predisposing causes. 6. Under all circumstances, but particularly when these complications exist, aspiration should be performed slowly. If the effusion is large the amount withdrawn at any one time should be moderate. 7. In some cases it may be wise to perform several tappings, drawing off a small quantity each time. 8. The treatment consists in counter-irritation, venesection, and artificial respiration, together with the use of morphin if the cough is severe."

68. **Primary Tuberculosis of Liver.**—Frank reports a case of this lesion and reports as follows: "1. That primary tuberculosis of the liver, though rare, may occur. 2. That the infection may take place by way of the intestine and the portal circulation, the bacilli finding entrance through an ulcer in the bowel (which in this case was at the time of illness some time previous), leaving no trace of the place of entrance into the body. 3. That tuberculosis of the liver may infect the other abdominal viscera and also the peritoneum secondarily. 4. That the process may cause a great increase of the connective tissue in the liver (interstitial hepatitis). 5. That the disease results fatally within twelve months."

69. **Stone and Tumor in the Bladder.**—The co-existence of stone and tumor in the bladder is seldom mentioned in the literature, and Rosenow finds only six articles on the subject. He reports a case and tabulates the recorded cases of this condition. The question of the relation between calculus and nephritis is discussed and the arguments that favor the view of tumor increasing the liability to calculus are given. In 8 cases the calculus was probably secondary to tumor. Tumors are not infrequently incrusted with phosphatic material and villous growths, especially when poorly nourished, and if they become detached, are likely to form a nucleus. The evidence that vesical calculus is a factor in the etiology of tumors is given as follows: 1. In nearly one-half the cases it appears that the stone was primary in point of time. 2. Inflammation of the urinary bladder caused by irritation, other than that produced by calculus, has been known to cause an increased liability to new growths. 3. Tumor of the urinary bladder un-

complicated by stone occurs more frequently in the lower segment, and the probable explanation here favored is the greater irritation of this portion by the chemical and mechanical agencies is the reason for this selection of site. The more frequent involvement of the anterior wall in a series where calculus was present must, in Rosenow's opinion, be ascribed to the influence of the stone. 4. The large number of cases in which the calculus was primary in point of time and the fact that calculi and tumors occur more frequently in the male and at nearly the same age, may be taken to indicate that the calculus was not without etiologic influence in the development of tumor. 5. Since in 90 or 95 per cent. of primary tumor of the gall-bladder, biliary calculi are present, analogy would lead us to expect a somewhat similar relation between stone and tumor in the urinary bladder; hence, the conclusion may be drawn that the etiologic relationship between calculus and tumor is not to be altogether denied. Calculus seems to favor the development of tumor in a larger percentage of cases than tumor favors the development of stone.

71. **The Effects of Color on Bacteria.**—Oliver's conclusions are given as follows: "1. Color-changes both of kind and of intensity take place in and around many chromogenic bacteria when such micro-organisms are placed under different color-conditions. 2. Rehabilitation of chromogenic bacteria into old color environments after having later obtained a new color-value under any particular color-condition, is quite frequently accompanied, sooner or later, with a return of the germ's color-equivalent to that which it primarily held while in its original situation. 3. Differences of color-conditions in pigment-bacteria most probably signify in part relative changes in the various methods of obtainance of sustenance, peculiarities in the kind and ratios of foodstuffs, and irregularities in the character of resulting excreta; each species of color-bacterium exhibiting its chromogenic change in a typical and relevant manner, a behavior that has its determining effect upon the very life of the germ itself. 4. The naming of bacteria by specific coloration is only of value when the actual habitat of the micro-organism is understood. 5. As a postulate conclusion based upon these facts, it is most certain that all living faunal and floral color-changes of true objective type are expressions of biochemic peculiarities taking place in and around such organisms—a mere difference of molecular motion as it were in part dependent upon the relationship existing between active life force and co-existing conditions."

73. **Diabetes Mellitus.**—Croftan has investigated the self-destruction of blood sugar and has repeated and amplified the experiments of Lepine, Arthus, Krause and others which seem to show that the blood and lymph incorporate an agent that can destroy sugar. Other experiments were undertaken to determine the source and character of the sugar-destroying substance ferment. He finds that this agent is contained in corpuscles and not in serum, and in the white rather than in the red cells; whether in leucocytes or plaques is not determined, and the degeneration of the white cells must occur before the ferment can develop its powers. The question as to the influence of the pancreas is also investigated, and it seems probable that it is in some way connected with the manufacture of glycolytic ferment, and that trypsin has formed this glycolytic ferment is shown by the impairment of the blood. Both the solution of trypsin and the solution of glycolytic ferment can digest fibrin in alkaline solution; they can coagulate certain coagulable solutions; give certain proteid reactions; they are precipitable by dilute acetic acids; they are soluble in water after contact with alcohol; they can form bile-pigment and acids from hemoglobin in the presence of small quantities of dextrose; they lose their power if dextrose is not present, and they possess glycolytic powers in the presence of hemoglobin, lose it in its absence and are rendered inactive by contact with urine, so that neither is normally excreted in the active form by way of the kidneys. In fact, they are so similar, even identical, that they can not be distinguished by any known method. Until proof to the contrary is forthcoming, we are justified in considering the glycolytic ferment of the blood and tissues to be none other than trypsin. The question of what causes pervert glycolysis and reduces the sugar-destroying powers of the body is not easy to answer, but Croftan concludes that pancreatic fluids play an important part in the function. While we can not assume pancreatic disease in all cases of diabetes, it is possible that functional diseases of the organ may exist during life, that leave no anatomic trace and that may have this effect. The recent discovery by Opie in regard to the frequent occurrence of degenerative changes in the islands of Langerhans give a certain experimental basis to such a hypothesis. Some therapeutic suggestions are offered as regards the treatment of diabetes and indications as to the increased glycolysis by supplying glycolytic ferment, and the following measures promise some success: 1. The infusion of chyle or of blood from a healthy animal. 2. The injection of leucocyte extracts. 3. The injection of trypsin. 4. The injection of vegetable glycolytic ferments. The experiments were made on animals that had been rendered diabetic by the extirpation of the pancreas; the reduction of sugar in the urine was observed to ensue in some of the cases from the injection of lymph, though there was a later increase. The leucocytes of the lymph seemed to be active in affecting the glycolytic action for a certain period, and after a while, the glycolytic ferment contained in the cells of chyle injected had disappeared and an increase of sugar followed. The effects of the blood injections were less marked; the injection of vegetable ferment with glycolytic powers has not yet been attempted, and the results of experiments with trypsin will be published later. The extreme toxicity of trypsin proves its greater power of altering the course of normal processes and when carefully tested and its safe dosage determined, it may be found of value in the treatment of diabetes.

74. **Ureteral Anastomosis.**—Nicholson reviews the various methods of operation for uretero-ureteral anastomosis and uretero-cystostomy, reports the general results from what has been done in this line and discusses the question of anastomosis of severed ureters with other organs, such as the bladder, uterus, etc. As regards uretero-intestinal anastomosis he concludes it is not a permissible operation, though the Maydl operation elaborated by Peterson may in future give better results. Little need be said as to the sites of ureteral implanation other than that the bladder, the skin, vagina, etc., all have disadvantages that make them practically out of the question.

80. **Congenital Lens Displacement.**—From his experience with reported and other cases, Brose would treat ectopia lentis: 1. By trying to secure satisfactory vision by properly adjusted lenses. 2. Failing in this, he would determine by the help of the mydriatic and a stenopaic disc whether a small iridectomy will give satisfactory vision—and, if so, perform it. 3. Especially if the patient is under 30 years of age, he would do a discission operation. Over 30 years of age it is better to extract the lens, on account of the danger of secondary glaucoma after discission. As a rule, he instructs the patient from the beginning that this condition has a tendency to grow worse with time, and that if the sight should rapidly fail or the eye become painful, he should report at once.

87. **Rickets from the Obstetric Standpoint.**—Bacon calls attention to the importance of rickets in girls in producing serious pelvic deformity and causing obstetric complications during the child-bearing period, illustrating it by reported cases. The disease is one of infancy, but its effects manifest themselves in adult life, and while we are not in possession of data of infantile rickets, the number of pelvic deformities due to this may be estimated from statistics kept up in various obstetric clinics. We know that pelvic contraction occurs in 10 to 20 per cent. of all women. There is, however, no agreement as to the relative frequency of contraction due to rickets and that due to other causes. Nevertheless, the great importance of rickets as an etiologic factor is admitted by all. He specially calls attention to the importance of early diagnosis. Unfortunately, there are no marked signs for the parents to observe and the physician may have a child under observation for some time before his attention is called to this. Chronic diarrhea should lead us to be on the lookout for it, so should backwardness in teething, sitting and walking. A special sign

of importance which may be mentioned is the well-known beading of the costo-chondral junction. The epiphyseal enlargement of the lower ends of the radius of the ulna, thickening of the bosses of the parietal and frontal bones of the skull and the symptom of head sweating which is so common in rickets should also excite suspicion. There are two considerations of importance: 1. Control of the disease process as soon as possible, which is generally managed by careful dieting and hygienic measures. Frequently we find children on a starvation died of diluted milk. The other is the care of the child to prevent pelvic deformity and so far as we can learn orthopedists have not considered this phase of rickets. Pelvic deformity is too often neglected, because it is hidden. No doubt there is difficulty in detecting the degree and presence of this deformity. Whether it is possible for practitioners to devise any kind of apparatus to relieve the trunk pressure on the sacrum is left for the orthopedist to decide.

97. **Hernia.**—The points specially presented by Holmes are: 1. That congenital defects are far more commonly the prevailing features in hernia production than has been supposed. 2. Nature protects us from these protrusions by an oblique canal, by an oblique internal ring, by a valve-like oblique flap of peritoneum, and by oblique pressure of the viscera, which actually tends to prevent protrusion. 3. Hernia existing, we should imitate nature; by making a new canal and a new internal ring; and by our methods of suturing so as to render them oblique; the new internal ring being the point of resistance, should not only be buttressed as directed by MacEwen and others, but the parietal peritoneum should be sewed to it above and below, and the new canal should have incorporated in it the floor of the old canal. 4. The aponeurosis of this external oblique muscle is used by nature as a point of counterpressure, and should therefore be sutured in front of the cord and not behind it. The ideal operation for the radical cure of inguinal hernia is still a surgical desideratum.

99.—See abstract in THE JOURNAL, xxxvii, p. 995.

100. **Pelvic Suppuration.**—Pryor holds that as an operation to prevent suppuration and check septicemia, vaginal section stands alone; as an operation of purely evacuative character vaginal section is the operation of choice; and as a procedure seeking removal of the uterus and both tubes, vaginal operation is far superior to abdominal section, except where high abdominal complications are found. For the removal of one purulent set of adnexa, there is no operation equal to abdominal section, and the vaginal operation is not to be thought of. He asks whether pelvic suppuration can be prevented and how. He finds that iodin compounds kill the streptococci, but it still remains for some one to discover the agent that will destroy the gonococcus without injuring the pelvic tissues.

101. **Vaccination.**—Hauenstein argues for the humanized virus as preferable to the bovine virus; he says the claim of some practitioners against the latter is absurd and hints that the epidemic of smallpox all over the world at the present is due to the adoption of this form of vaccine. He thinks the humanized virus will gain in favor and become more general.

106.—See abstract in THE JOURNAL of January 18, p. 197.

107. **The Antistreptococcus Serum.**—The causes of failure of the antistreptococcic serum are credited by Leudeking to: 1. The polymorphism and variability of streptococci. 2. The fact that few septic processes in man are pure, unadulterated streptococcus infections. 3. The usually tardy and late employment of the remedy. 4. The inertness of many of the sera that are on the market. He reports several cases of the use of this serum with advantage, and holds that the early administration of a recent serum in fitting cases of streptococcus infection will prove life-saving. Early intervention in erysipelas and in middle-ear suppuration gave good results. In puerperal infection matters are not so simple, but if the streptococcus pyogenes is the agent, the early treatment should bear good fruit. In any case of abscess of the brain, empyema of the chest, or a purulent exudate in the peritoneal cavity, the serum has no application. Its employment would be irrational, at least until after proper surgical help had been obtained. In the author's experience the injection of serum has no special dangers. He has met with urticaria and painful joints, accounted for by the large bulk of ingested foreign serum. It is not seen to affect the circulation or respiration. We should watch the kidneys. We should learn properly to apply a good preparation and should give it early in proper cases.

108. **Free HCl.**—Bleyer has investigated the effect of different foods on the production of free HCl in the infant's stomach. He finds from these data that foods containing little or no albumin to utilize the HCl and yet encouraging its production will produce hyperacidity with the usual symptoms of continued vomiting, unremitting hunger and wasting. In absence or deficiency of acid we find intestinal disturbance. He calls attention to the advisability of examining carefully the condition of the gastric juice in every case of infectious enteritis and where HCl is lacking to carefully detract the caseins until sufficient HCl is permitted to exist in the stomach to stay the invasion. When hyperacidity is present, on the other hand, and every food has been tried, when the vomiting is persistent and excessive, and especially with the more delicate foods, then we may increase the caseins, double or treble them, and give the hydrochloric acid a chance to do its physiologic duty.

109. **Diphtheria.**—The rules followed by Saunders in the management of diphtheria are given by him as follows: 1. In all cases exhibiting an exudate or a pseudo-membrane in the faucial mucous membrane, administer pilocarpin at once, in doses large enough to excite its physiologic action. When there is the least suspicion that the case is diphtheria the diagnosis should be settled and antitoxin employed without delay. The dose of antitoxin should be large enough to neutralize all the toxins in the blood and an excess that will neutralize all that may occur in the circulation the following week. A sufficient dose must be given at once and need not be repeated. For a mild case 1500 units may be given, a case of moderate severity should receive 2000 units and a severe infection from 2000 to 3000 units. Special attention should always be given to the antitoxin. If only old serum can be obtained, the least concentrated should be chosen, so that more can be injected, and allowance must be made for the deterioration. A serum that is two months old should be regarded as only about one-half the strength that is marked on the vial. Even when the temperature drops to normal and the membrane begins to be cast off, the pilocarpin should be continued for one or two days in diminished doses, stimulating the leucocytes and hastening convalescence. If the case comes under treatment after the fifth day pilocarpin should be used with caution, on account of the danger of heart failure. Other medication is rarely necessary, except possibly an initial purgative of calomel. Tonics are indicated during convalescence. He believes that applications to the throat can do no good. The fear which many of the profession entertain for pilocarpin is groundless.

110. **Infant Feeding.**—Zahorsky emphasizes the fact that in placing an infant on any food, we should bear in mind that a period of adaptation may be necessary for its proper digestion and assimilation. This period varies in length from a few days to many weeks, depending on a great variety of factors. The idiosyncrasy of the child should be considered. Some can not digest casein or cow's milk and others can not ingest fat. Observations indicate that in the presence of an active gastric juice with a strong percentage of hydrochloric acid caseinogen is well digested. The great susceptibility towards intestinal bacteria and bacterial products in infants is mentioned and inquiry should be made as to the bactericidal power of infants' foods. With our present knowledge we should watch this, but much has yet to be learned. Babies fed on condensed foods and milks are especially susceptible to intestinal infection. Our knowledge of the effects of foods on intestinal peristalsis is also important, and we know that starches are constipating, while fats and sugars are laxative. Beyond this there is not much that is definite. He finds that whey almost invariably increases the number of passages and intestinal irritability, while casein is constipating, as pointed out by Holt. Hence its withdrawal in certain forms of diarrhea is contra-indicated. The question of osmosis is also con-

sidered. Should all food constituents be in solution before absorption takes place? The lesson is plain, in the modification of milk, the osmotic pressure should always be adjusted so that it approximates human milk. The effects of inorganic salts in the food ingested is a matter of importance, though they are usually ignored in the modification of milk. He lays down certain therapeutic principles by which the feeding of infants must be governed, as follows: "1. Normal osmotic pressure should be restored when a deficiency of the diffusible substances is present in the food, by the addition of salts. 2. The electric conductivity of the fluids depends on the presence of inorganic molecules, foods poor in this (as albumen water) should be enriched by the addition of salts. 3. In the process of metabolism, sulphuric and phosphoric acid is formed by oxidation from the tissue proteids, and an adequate quantity of basic radicles must be present in the blood to neutralize these acids. 4. It is known that citrates exist in the milk, possibly other compounds may be found which also contain a metal in combination with an organic compound. Certain dried and heated foods probably do not contain these free bases in sufficient quantity. 5. Sodium chlorid must exist in all foods, but as to the other salts we are yet in the dark."

125.—See abstract in THE JOURNAL of January 11, p. 125.

130.—This article has appeared elsewhere. See THE JOURNAL, XXXVI, p. 1736.

133. **Artificial Anus.**—Tuttle performs an operation for artificial anus by making an incision one inch above and one and a half inches inside the anterior superior spine, parallel with the fibers of the external oblique, and separating these fibers with a dull instrument. The internal oblique is similarly treated, the wound is held open and the fascia transversalis and the peritoneum incised in the line of the original incision. As soon as the peritoneum is opened, the patient should be placed in the Trendelenburg position and the edges of the wound grasped with fixed forceps to prevent the membrane being stripped off the abdominal wall in subsequent procedures. The wound should be enlarged so as to allow the introduction of the entire hand for thorough exploration, and if a temporary artificial anus is advisable, the rectum is traced upward to the sigmoid flexure, which is grasped and dragged out through the abdominal wound. If the anus is employed to give functional rest to the parts, or for the local treatment of inflammatory diseases of the lower end of the intestinal tract, it should be made in the lowest portion of the sigmoid that is healthy. If it is intended as a preliminary to extirpation or resection of the rectum, it should be made in the highest loop of the sigmoid in order to allow the operator the greatest latitude in dragging down the gut in the operation. After determining the site, the loop of the gut should be drawn well out of the abdominal wound, and a glass rod four inches long should be passed through the mesentery beneath the gut, its ends resting on either side of the wound. Care should be taken to avoid the blood vessels of the mesentery. The gut, being then held above the skin, is fastened at the corners of the wound by chromicized catgut, passed through the skin and peritoneum of the abdominal wound, then through the peritoneal and muscular wall of the gut and finally through the peritoneum and skin of the opposite side of the wound. These are all the sutures required. The abdominal muscles draw together and effectually prevent any protrusion of the small intestine. Small pads of iodoform gauze are put under each end of the glass rod and the whole is dressed with protective tissue covered with absorbent cotton or gauze held in position by an abdominal bandage or adhesive straps. Unless urgency requires it, the intestine should not be opened for twenty-four or forty-eight hours. For gaseous distension the use of a trocar may be advisable. In opening the intestine no portion of its circumference or wall should be sacrificed. It is done by incision in the longitudinal muscular fibers extending from the superior juncture of the abdominal skin down to a point one-half an inch below the rod. At the lower end of this wound a transverse incision is made involving two-thirds of the circumference of the gut. The two little triangular flaps in the upper portion of the loop thus roll upward like dried leaves, the lower flap falls inward and effectually closes the distal segment of the intestine. The glass rod is left in position from ten days to two weeks, after which time the gut will be so firmly adherent to the abdominal wound that there will be no danger of its sagging down nor of escape of fecal material into the intestine below. This makes an effectual inguinal anus, the entire wall of the intestine is preserved and firm closure is possible without material reduction in the caliber of the canal. In closing the anus the little triangular flaps are uncurled by blunt dissection either with the finger nail or a blunt instrument. Their edges and that of the lower flap are then freshened and the T-shaped wound is sutured first by bringing together the mucous membrane with silk sutures and tying the ends inside the intestine. The muscular and peritoneal walls are then brought together by Lembert sutures with fine chromicized catgut. The opening in the gut being thus closed, the latter is then dissected from the attachment to the skin and the muscular wall of the abdomen down to the peritoneum. This membrane is then stripped from the abdominal wall by gentle pressure with the finger or gauze pledgets for about one-half an inch all around the abdominal wound without opening the peritoneal cavity. This loosening forms a loop which allows the knuckle of the intestine in which the artificial anus has existed to drop downward into the abdominal cavity below the muscular walls of the abdomen. The latter are then tied together by one or two silkworm gut sutures and the skin closed as the operator may prefer. He has operated in ten cases in this way; in two there were leakage and small mural abscesses, which were followed by fecal fistulæ, which healed spontaneously. In no case was there any tendency to hernia or stricture of the intestines. The operation of closure is practically without any danger, as the peritoneum is not opened and leakage from the wound is therefore always outside of the cavity. In colostomy of the right side, the rod may not be practicable as the mesocolon is frequently too short to drag the gut well outside the abdominal cavity. Here Cripps' method is the one to be followed.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below.

British Medical Journal (London), March 29.

1 Cases of Lymphangiectasis with Enormous Overgrowth of Cutaneous and Subcutaneous Structures. Walter Whitehead.
2 *Treatment and Morbid Anatomy of Enlarged Prostate. Cuthbert S. Wallace.
3 Total Extirpation of the Prostate for Radical Cure of Enlargement of the Organ. Charles Roberts.
4 *A Short Note on the Surgical Use of Subcutaneous Injections of Carbohydrates in Exhausting Diseases. Arthur E. Barker.
5 Intravenous Injection of Normal Saline Solution in a Severe Case of Hematemesis; Recovery. H. E. Bruce-Porter.
6 Single Non-Tuberculous Ulcer of the Bladder; Suprapubic Cystotomy; Cure. J. B. Christopherson.
7 Suprapubic Cystoscopy. E. Hurry Fenwick.

The Lancet (London), March 29.

8 *The Comprehensive Study of Thoracic Phthisis. F. T. Roberts.
9 *Notes on the Treatment of Furunculosis, Sycosis and Acne, by the Inoculation of a Staphylococcus Vaccine, and Generally on the Treatment of Localized Bacterial Invasions by Therapeutic Inoculations of the Corresponding Bacterial Vaccines. A. E. Wright.
10 The Surgery of Non-Malignant Gastric Ulcer and Perforation. C. B. Keetley.
11 An Example of Universal Hirsuteness. A. J. Balmanno Squire.
12 A Case of Appendicitis in Which the Appendix was Lodged in, and Adherent to, the Femoral Canal. John H. Galton.

Annales de l'Institut Pasteur (Paris), February.

13 Streptobacillary Pseudo-tuberculosis of the Rat. J. Sabrazés (Bordeaux).—"Pseudotuberculose streptobacillaire du mus decumanus."
14 Rôle of the Between-Bodies in Phagocytosis. J. B. Savtchenko.—"Du rôle des immunisines (fixateurs) dans la phagocytose."
15 Cytases. L. Tarassevitch (Kieff).—"Sur les cytases."
16 Vascular Lesions Induced by Diphtheric Toxins. Rematzky.—"Recherches sur les lesions vasc. provoquées par les toxines diphthériques."
17 Modifications of the Leucocytes in Cattle Plague. Réfik-Bey.—"Modifications leucocytaires dans la peste bovine."

Annales des Mal. Gen.-Urin. (Paris), January.

18 *Remote Results of Surgical Intervention in Three Cases of Traumatic Laceration of the Urethra. Guyon (Paris).—"Suites eloignées de l'int. chir. dans three cas de déchirures traum. de l'urètre."
19 Pathologic Anatomy of Bladder. N. Hallé.—"An. path. de la vessie."
20 Bacteriologic Study of the Bladder. R. Faltin (Helsingfors).—"Recherches bact. sur l'infection vesicale."

Bulletin de l'Acad. de Med. (Paris), March 18.

21 *Preventive Injections of Antidiphtheria Serum. Netter.—"La prophylaxie de la diph. par les injections prév. de sérum."
22 *Surgery of the Heart. J. Fontan (Toulon).—"Contribution à la chirurgie du cœur."

Revue de Gynecologie (Paris), vi, 1.

23 *Superiority of Colpotomy for Treatment of Pyosalpinx. H. Treub (Amsterdam).—"La colpotomie, traitement op. de choix du pyosalpinx."
24 To T. Gaillard Thomas of New York. Editorial.
25 Tubo-Uterine Pregnancy. Muret (Lausanne).—"De la grossesse interstitielle."
26 Anatomy of Tubal Pregnancy. A. Couvelaire.—"Quelques points de l'anatomie des grossesses tubaires en évolution."
27 *Multiple Strictures of the Small Intestine. Patel (Lyons).—"Les rétrécissements multiples de l'intestin grêle."
28 *Cancer of Cecum and Sigmoid Flexure. Gouilloud (Lyons).—"Cancer du cecum et cancer de l'S iliaque."
29 *Hepatoptosis and Hepatopexy. H. Judet (Paris).—"De l'hepatoptose et de son traitement par l'hepatopexie."

Progres Medical (Paris), March 15 and 22.

30 *Paramyoclonus Multiplex. A. Murri (Bologna).

Allg. Med. Cent.-Ztg. (Berlin), March 15 and 22.

31 Treatment of Diabetes. Lenné (Neuenahr).—"Zur Behandlung des Diabetes mellitus."
32 Two Cases of Probable Inoculation with Bovine Tuberculosis. B. Freytag (Hanover).—"Zwei Fälle von wahrsch. Perlbacillen-Impfung."

Archiv f. Gynaekologie (Berlin), lxv, 3.

33 Acetonuria in Pregnancy. M. Stolz (Graz).—"Die Acetonuria in der Schwangerschaft, Geburt und im Wochenbett."
34 Remote Results of Conservative Treatment of Early Interrupted Extra-uterine Pregnancy. C. von Scanzoni (Leipsic).—"Ueber die Dauerresultate bei cons. Beh. frühzeitig unterbrochener Extraut.-graviditäten."
35 Histogenesis of Ovarian Cystomata. S. Gottschalk (Berlin).—"Zur Histogenese der dickgallertigen Ovarialkystome."
36 Operative Treatment of Prolapse. P. Baumm (Breslau).—"Die op. Beh. des Scheiden- und Gebärmuttervorfalles."
37 Clinical and Anatomic Study of Cancer of the Uterus. Kraemer (Breslau).—"Klin. und an. Untersuchungen ueber den Gebärmutterkrebs."
38 *Pathogenesis of Eclampsia. L. Blumreich (Breslau).—"Exp. und Klin. Beitraege zur Pathogenese der Eklampsie."

Archiv f. Klin. Chirurgie (Berlin), lxv, 3 and 4.

39 *New Conservative Operation on the Testicles. W. J. Rasumowsky (Kasan).—"Neue conserv. Op. am Hoden."
40 *Cause of Death in Strangulation of Small Intestine. V. Albeck (Copenhagen).—"Exp. und klin. Untersuchungen ueber die Todesursache bei Dünndarmstrangulation."
41 Spina Bifida. P. Bockenheimer (Berlin).
42 *Operations on Gasserian Ganglion. E. Lexer (Berlin.)—"Zur Op. des Ganglion Gasseri nach Erfahrungen an 15 Fällen. Zusammenstellung der ausgeführten Exstirpationen des G. G."
43 Orthopedic Couch for Application of Bandages to Trunk in Treatment of Scoliosis, etc. F. Staffel (Wiesbaden).—"Ueber ein orthop. Bank zur Anlegung von Rumpfverbänden in Schwebelagerung zum modellirendem Redressement der Skoliosen und zu anderen Zwecken."
44 *Operative Treatment of Brain Tumors. E. von Bergmann (Berlin).—"Zur Casuistik op. Hirntumoren."
45 Metaplasia of Epithelium. P. Eichholz (Konigsberg).—"Exp. Untersuchungen ueber Epithelmetaplasie."
46 Static Relations of Bones in Thigh. C. Ghillini (Bologna).—"Ueber die stat. Verhältnisse des Oberschenkelknochens."
47 Wounds from Firearms and Artillery in Boer War. A. Hildebrandt.—"Wirkungen des kleinkalibrigen Geschosses und der Artillerie im Boerenkriege." Concluded from No. 3.
48 Comparative Study of Cancer in Domestic Animals. A. Sticker (Frankfurt a. M.).—"Ueber den Krebs der Thiere, insb. ueber die Empfänglichkeit der versch. Hausthierarten und ueber die Unterschiede des Thier und Menschenkrebses." Concluded from No. 3.

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49 Bacteriologic Study of Scarlet Fever. A. Baginsky (Berlin). "Ein constanter Bacterienbefund bei Scharlach."
50 *Scarlet Fever Nephritis. A. Baginsky.—"Ueber Scharlach-Nierenentzündung."
51 Indications for Op. Treatment of Diphtheric Stenosis of the Larynx. G. Alsberg (Berlin).—"Ueber die Indicationsstellung der op. Beh. der diphth. Larynxstenose."
52 Histogenesis of Arterial Duct. H. Roeder.—"Die Histogenese des art. Ganges."
53 Porencephalia. G. Alberg.
54 Utilization of Phosphorus and Nitrogen During Milk Diet of Older Children. P. Sommerfeld.—"Zur Kenntniss der Ausnützung von Phosphor und Stickstoff bei reiner Milchernährung älterer Kinder."

xxxiii, 3 to 6.

55 Arrangement, etc., of Hospitals for Infants. A. Schlossmann (Dresden).—"Ueber Säuglingskrankenanstalten."
56 Phosphorus Cod Liver Oil. A. Heiduschka.—"Untersuchungen ueber Phosphorleberthran."
57 Infant Feeding. Flachs.—"Prakt. Gesichtspunkte zur Säuglingsernährung."
58 *Causes of Infant Mortality in Institutions. A. Schlossmann.—"Ursachen des Todes bei der Anstaltsbehandlung kranker Säuglinge."
59 Contracted Kidney in Infancy. Ida Democh.—"Genuine Schrumpfniere im Säuglingsalter."
60 Infant Feeding. A. Schlossmann and H. Peters.—"Grösse der Einzelmahlzeiten der Säuglinge bei nat. Ernährung. Zur Frage der nat. Säuglingsernährung."
61 Review of Tracheotomy and Intubation in Diphtheria Since Serum Treatment. Siegert (Strassburg).
62 *Growth of Colon Bacillus in Milk. O. Cozzolino (Naples).—"Ueber die Veg. vom Bact. Coli in der Kuh, Ziegen-, Eselin- und Frauenmilch."
63 Care of Infants in Institutions. Cornelia de Lange (Amsterdam).—"Zur Anstaltspflege von Säuglingen."

Berliner Klin. Wochenschrift, March 3.

64 Study of the Alexins. H. Sachs (Frankfurt a. M.)—"Giebt es einheitliche Alexinwirkungen?"
65 *Study of Embolism of the Superior Mesenteric Artery. R. Sievers (Helsingfors).
66 Alcohol as a Disinfectant for the Hands. R. Schaeffer.
67 Sterilization of Milk for Infants at Lowest Possible Temperature. E. Kobrak (Berlin).—"Ueber Ster. von Säuglingsmilch bei möglichst niedrigen Temperaturen."
68 Nephritis Syphilitica Acuta Præcox. E. Salkowski (Berlin).
69 Functional Diagnosis of the Kidneys. F. Strauss (Frankfurt a. M.).—"Zur funct. Nierendiagnostik."

March 10.

70 *Study of the Substitution of the Bromids for Salt. T. Hondo (Berlin).—"Zur Frage der Subst. des Chlors durch Brom."
71 Myogenic Rigidity of the Spine. R. Cassirer.—"Ueber myog. Wirbelsteifigkeit."
72 Hydrotherapy of Tuberculosis. S. Munter.
73 Second Report of Institute for Medical Diagnosis at Berlin. M. Klopstock.

Centralblatt f. Chirurgie (Leipsic), March 22.

74 *Simple Means of Locating Foreign Bodies in the Brain by Radioscopy. H. Stamm (Hildesheim).—"Beitrag zur Lagebestimmung von Fremdkörpern im Gehirn mittels Röntgenphotographie."

Centralblatt f. Gynaekologie (Leipsic), February 8 to March 8.

75 Two Cases of Fetus Papyraceus. T. von Lichem (Klagenfurt).
76 Case of Vagitus Uterinus. L. Reidhaar (Basle).
77 *Treatment of Sepsis. J. Wernitz (Odessa).—"Zur Beh. von Sepsis."
78 Deportation of Villi and Its Consequences. R. Scholten.—"Weitere Untersuchungen ueber Zottendeportation."
79 Dubious Sex of a Hermaphrodite. F. Neugebauer.—"Fall von zweifelhaftem Geschlecht eines als Frau verh. Scheinzwitters."
80 Traumatic Granuloma of Female Bladder. G. Kollscher (Chicago).—"Traum. G. der weiblichen Blase."
81 Complicated Birth After Low Vagino-Fixation. F. Stähler (Siegen).—"Vorderer Uterus-Scheidenschnitt bei Geburtskomplication bedingt durch tiefe Vaginæfixur, mit Fibromenukleation und Cervixplastik."
82 Case of Vaginal Defect. C. Donati (Innsbruck).
83 Pathology and Diagnosis of Tuberculosis of the Cervix. E. Alterthum.—"Zur Path. und Diag. der Cervixtub."
84 *Castration by Application of Steam to the Interior of Uterus. L. Pincus.—"Castratio mulieris interna."
85 *Posterior Parametritis an Intestinal Affection. A. Mueller (Munich).—"Parametritis post. eine Darmerkrankung."
86 Report of Third Series of Thirty Operations on Uterus. E. Wertheim (Vienna).
87 Cervical Segment and Contractio Previa: Suggestion for Obstetric Nomenclature. H. Beyer (Strassburg i. E.).

Deutsche Med. Wochenschrift (Leipsic), March 20.

88 Study of the Central Nervous System in Foot and Mouth Disease. G. Scagliosi (Palermo).—"Untersuchungen ueber das cent. Nervensystem bei Maul und Klauenseuche der Rinder."
89 *Toxinemia. S. Kaminer (Berlin).
90 Tuberculosa Verrucosa Cutis. M. Joseph (Berlin).
91 *Bone Charcoal as Substitute for Iodoform. A. Frommer (Cracow.)—"Knochenkohle als Ersatz für Iodoform."
92 *Gallstone Ileus. Karewski (Berlin).—"Ueber Gallensteinileus." Concluded from No. 11.
93 *Specific Treatment of Typhoid Fever. J. Petruschky (Dantzic).—"Spec. Beh. des Abdominaltyphus."

Deutsche Zeitschrift f. Chirurgie (Berlin), January.

94 Dislocation of Tendons. J. P. Haberern (Budapest).—"Ueber Sehnenluxationen."
95 *Results of Surgery of the Kidneys. V. Schmieden (Bonn).—"Die Erfolge der Nierenchirurgie."
96 Cure of Chylous Ascites by Laparotomy. E. Pagenstecher (Wiesbaden).—"Ascites chylosus. Ein durch Lap. geheilter Fall."
97 Intramuscular Cavernous Angioma. C. Strauch (Braunschweig).
98 *Orthopedics of the Ovaries. E. Rose (Berlin).—"Eine Art Orthopädie der Ovarien."
99 Exclusion of Intestine as Preliminary to Extirpation of Cecal Tumor. O. Langemak (Rostock).—"Die Darmausschaltung als präl. Op. vor Exstirpation grosser Cöcaltumoren."
100 Serous Cysts of the Outer Ear. W. von Noorden (Munich).—"Beitrag zur serösen Cyste der Ohrmuschel."
101 Operative Treatment of "Retrocollis Spasm." W. Mintz (Moscow).—"Zur op. Beh. des retrocollis spasm."
102 Origin of Gastric Ulcers, etc., after Experimental Resection of Omentum. G. Engelhardt (Halle).—"Entstehung von Magengeschwüren, etc., nach exp. Netzresectionen."
103 *Laceration of the Intestines by Horse's Kick. Riegner (Breslau).—"Darmzerreissung durch Hufschlag."
104 Subcutaneous Laceration of the Longitudinal Sinus. Ibid.—"Subcutane Zerreissung des Sinus Longitudinalis Durae Matris."

February.

105 Cystic Degeneration of Hermann's Sinus and Genesis of Anal Fistulæ. E. Tavel (Berne).—"Cyst. Entartung der S. H. und Genese der Analfisteln."

106 Value of My Method of Detaching the Hip-Joint. E. Rose (Berlin).—"Der Werth meiner Extirpationsmethode bei der Auslösung des Oberschenkels."
107 Inflammation and Gangrene of Meckel's Diverticulum. Denecke (Braunschweig.)—"Ueber die Entzündung des M. D. und die Gangrän desselben."
108 Pathogenesis of Thrush. Ibid.—"Beitrag zur Pathogenese des Soor."
109 Spontaneous Luxation of Hip-Joint in Acute Infectious Diseases. H. Graff (Bonn).—"Ueber die Sp. Lux. des Hüftgelenkes im Verlauf von acuten Inf.-Kr."
110 Preservation of Useful Arm in Spite of Crushing of Upper Arm, Leaving Only Small Bridge of Soft Parts. C. Ossig (Breslau).—"Erhaltung eines brauchbaren Armes."
111 Congenital Malformation of Small Intestine. S. Lilienfeld.—"Zur Casuistik der angeb. Missbildungen des Dünndarmes."
112 *Is an Operation Indicated in Gastric Hemorrhage, and if so, Which? W. Kaupe (Bonn).—"Ist bei lebendrohende Magenblutung in Folge von Ulcus Ventriculi ein op. Eingriff indicirt und welcher?"

Muenchener Med. Wochenschrift, March 18.

113 Abdominal Hysterectomy for Complete Rupture of Uterus. J. A. Amann, Jr. (Munich).—"Die abd. Totalexstirpation bei kompleter Uterusruptur."
114 Anilin Dyes as Means of Precipitating Albumin. M. Heidenhain (Tübingen).—"Die Anilinfarben als Eiweissfällungsmittel."
115 Study of Silicic Acid as a Possible Therapeutic Agent. H. Schulz (Greifswald).—"Einige Bemerkungen ueber Kieselsäure."
116 *Surgical Treatment of Spasm of the Cardia. F. Cahen (Cologne).—"Zur chir. Beh. des Kardiospasmus."
117 Case of Peculiar Stenosis in Small Intestine. A. Groth.—"Fall von eigenartiger Stenosenbildung im Dünndarm."
118 Gangrene of the Lungs After Aspiration of a Fragment of Straw. E. Schlechtendahl (Barmen).—"Lungengangrän nach Aspiration einer Kornähre."
119 Arrangement of Hygiene Expositions. K. B. Lehmann (Würzburg).
120 Hemorrhagic Purpura with Genital Tuberculosis. Gossner.—"Fall von Purpura hem. bei Genitaltub."

Wiener Klin. Wochenschrift, March 6 to 20.

121 Folliculitis Exulcerans Serpiginosa Nasi. E. Finger (Vienna).
122 *Experimental Transplantation of Kidney. E. Ullmann (Vienna).—"Exp. Nierentransplantation."
123 Ibid. A. von Decastello.
124 *The Destruction of the Albuminoids in the Liver. Töpfer.—"Ueber den Abbau der Eiweisskörper in der Leber."
125 *Treatment of Epityphlitic Abscesses in Douglas' Pouch. F. Pendl.—"Zur Therapie des epit. Douglasabscesses."
126 Retroperitoneal Hematoma Simulating Torsion of Ovarian Cyst. E. Waldstein.
127 Twin Pregnancy in Uterus Bicornis. O. Rudl (Darntheim). "Uterus bicornis mit Zwillingsschwangerschaft und Placenta incarcerata."
128 Vaginal Hysterectomy. A. von Mars (Lemberg).—"Ueber die Uterusexstirpation durch die Scheide."
129 *The Oculo-Pupil Sensory Reflex. L. von Varady (Budapest). —"Untersuchungen ueber den oculopupillären sensiblen Reflex."
130 Neuro-Psychic Disturbances in Acute Yellow Atrophy of the Liver. K. von Wieg (Vienna).—"Ueber einen Fall von ac. gelber Leberatrophie und die dabei auftretenden psych.-nerv. Störungen."

Gazzetta degli Ospedali (Milan), March 16 and 23.

131 Basophilic Granulations in Reds in Hemoglobinuria. G. Guyot.—"Le gran. bas. nei globuli rossi in un caso di emoglobinuria paross'stica a frigore."
132 Heat Stroke in the Tropics. M. Salvatore (Palermo).—"Nota clin. sui colpi di calore tropicali."
133 *Vaccination in Prophylaxis of Pertussis. G. Poschi.—"Contributo alla Profilassi della pertosse."
134 Rapid Cure of Pulmonary Tuberculosis with Antitoxin. A. Cambiaso.
135 Two Cases of Traumatic Tetanus Cured by the Baccelli Method. G. Copetti.
136 *Treatment of Gonorrheal Epididymitis and Orchitis with Guaiacol. A. Bocchi (Modena).—"Sulla Medicazione al guaiacol nella epid. ed orch. blenorragica."
137 *Experimental Proof of Internal Secretion of Suprarenals. I. Salvioli (Padua).—"Ulteriore contributo allo studio della funzione delle capsule sopra-renali."
138 Experimental Peritonitis. N. Valerio.—"Osservazioni sulla peritonite sperimentale."
139 *Methylene Blue in Malaria. A. De Blasi.
140 Evolution of the Parasitic Theory. P. Demateis.—"Evoluzione della teoria parassitaria."
141 Bilateral Nephrotomy for Very Large Calculi. A. Tassoni (Cesena).—"Nefrotomia bilat. per voluminosi calcoli renali."

Brazil-Medico (Rio de Janeiro), March 1.

142 *Tabes Dorsalis. V. de Britto (Porto Alegre).—"O tabes dorsalis e a doutrina da especificidade."

Nordiskt Med. Arkiv. (Stockholm), xxxiv, 1, 4.

143 *Experimental Appendicitis. J. Nicolaysen.—"Exp. App."
144 *Transplantation of Tendons. Bülow-Hansen (Christiania).—"Ueber Sehnentransplantationen und Plastiken."
145 *Polycystic Degeneration of the Kidneys. J. Borelius (Lund). —"Zur Genese und klin. Diagnose der polycystischen Deg. der Nieren."
146 Transplanting the Penis to Close Extensive Defects in Urethra. G. Ekehorn.—"Ein neues Verfahren um grössere Defekte der Harnröhre durch Abwärtstransplantirem des Penis und des entsprechenden vorderen Teiles der Harnröhre zu schliessen."

2. **Prostatic Enlargement.**—It is customary to speak of the enucleation of the prostate, and Wallace has investigated to ascertain whether or not it is an anatomic possibility. He has examined a large number of specimens in the Museum of the Royal College of Surgeons and finds quite a difference in structure in the different cases. The increased size of the organ he finds is due in the first instance to increase in the glandular elements. The growth usually affects the greater part of the organ, but often leaves small portions almost unaltered. Within a large area the alteration of the glandular element may be of varying degree, consisting in some cases of small discrete points, while in others well-marked adenomatous lobules occur, usually compound, and may occupy the whole space within the "capsule." The hypertrophy in these cases is therefore best described as an adenomatous hypertrophy, comparable to the adenomatous form of goiter. Next, he considers the nature of the so-called capsule, quoting from Quain's "Anatomy" as to its character, and giving the results of his own examinations. He finds that this capsule is really a portion of the normal prostatic tissue. The stretched and laminated amount of prostatic tissue found after removal will depend on the situation at which the separation has been made. The amount of "capsule" found will depend on whether the separation has been carried through or within the so-called capsule, which is really altered prostatic tissue. It does not seem possible, he says, to enucleate the prostate in its normal state, judging from the examination of the specimens; the upper part of the rectal surface may be cleared of its enucleated fibrous tissue over a small area and the prostate, covered by a thin fibrous layer, exposed. Laterally, these two fibrous layers join together to enclose the lateral plexus of the veins. Immediately within this sheath is a fibro-muscular layer, and by working within this sheath with a blunt instrument the main mass of the organ may be separated from the fibrous covering with more or less difficulty, but leaving a rough and ragged surface without any resemblance to enucleation. The normal organ has no separable capsule. The connection between the prostate and the urethra is even more intimate than between the prostate and its fibrous covering. When, however, adenomatous hypertrophy exists, it is well known that certain forms are enucleable and the surface after may be as smooth as that of most adenomata in the other organs or may exhibit in some cases areas of torn tissue. The readiness of removal depends on the situation of the adenoid masses and the isolation from the surrounding tissue. If they have grown so as to protrude into the bladder, the line of separation, after the incision of mucous membrane, is soon reached and the enucleation quickly carried out. If they lie more deeply a considerable layer of prostatic tissue must be traversed before the line of separation is reached. Then again, the mass may not have become isolated from the surrounding prostatic tissue or only partially so; some tearing may be required. If the quickly growing adenomatous masses were situated near the center of the lobes it is conceivable that they still would have left a considerable zone of tissues between themselves and the urethral wall so that in their removal the urethra may be left intact. There are, unfortunately, some cases of enlarged prostate which do not present any easily separable tumors and any attempt at removal simply means tearing the organ away piecemeal.

4. **The Subcutaneous Injections of Carbohydrates.**—Barker calls attention to a method of introducing compounds into the circulation which may be looked upon in the light of foods, and not merely the innocuous addition to the blood of water that is lost as in the use of saline solution. This is the addition to the normal saline solution of pure glucose. The idea was first obtained from Professor Lennander of Upsala, since which he has used it both in hospital and private practice with much satisfaction. Five per cent. of glucose added to normal saline solution equals .06 per cent. of the total. He finds that a 5 per cent. solution of sugar freezes at the same point as the serum of blood and as normal saline solution and in the language of botanical physiologists is isotonic or isosmotic with the latter and should be indifferent to tissues.

This is a practical fact. The question of isotonic or isosmotic fluids in relation to human tissues is interesting and should always be borne in mind in injecting subcutaneously, but it is only necessary here to remember that fluids (exclusive of corrosives) of the same freezing point as serum are isotonic and produce neither pain nor other change in the tissues in which they are injected. He has largely employed the saccharo-saline solution both in preparing exhausted patients for operation and supporting them during and after the latter. Thus far he has limited himself to 25 grams in twenty-four hours as advised, equal to a liter of 5 per cent. solution and has never seen any sugar in the urine. The mode of its employment is given as follows: "An ordinary aspirator needle of about 1 mm. in the transverse section of its lumen attached to 3 feet of rubber tubing, and with a glass funnel at the other end, is all that is necessary. This apparatus is, of course, carefully sterilized by boiling, and is filled with the sterilized and warmed saccharo-saline fluid; the needle is introduced under the sterilized skin of the arm near the axilla, and the funnel is raised 2 feet, when the transfusion is found to proceed easily, as a rule, until the whole half liter is seen to distend the subcutaneous tissues of the arm and axilla. In preparing, say, for a gastro-enterostomy in an exhausted patient, I do this with 500 c.c., morning and evening if possible, for some days before and up to the time of operation; and on the table again another 500 is injected. Possibly more might be used, but for the present I have been using only the half liter at a time. Again, for days after, while the stomach only receives a limited amount of food and fluid, the same course is pursued. The effect of this treatment has been uniformly good as regards pulse, general strength, and relief of thirst. There is another effect which I think ought to be taken into account in septic cases; for example, appendicitis with septic peritonitis. This is the increased secretion of urine which is rendered possible by the free use of saline injections. We believe that some, if not all, of the toxins in such cases are eliminated from the system by the kidneys. If this is so the presence of abundance of water in the body ought to render the work of the kidneys easier. The toxins would be excreted in more abundance if there were plenty of water to be excreted and in greater dilution. The saving to the kidneys in eliminating dilute poisons rather than concentrated ought to be great, and we ought to see less of renal complications. In a case of very extensive peritonitis following on gangrenous epityphlitis I recently gave subcutaneously half a liter of the fluid mentioned above morning and evening for a fortnight, with, I believe, good results in many ways. But in the preliminary treatment the operation and after-treatment of exhausted patients, the use of the saccharo-saline subcutaneous infusion is beyond doubt of great value, and ought to be more widely known and practiced. A concentrated solution is now made for me sealed up in glass capsules, which can be diluted to the proper strength in a moment with the corresponding amount of boiled water. Such capsules can be carried about for every serious operation and will, I believe, in the future to be found of much use."

8. **Pulmonary Tuberculosis.**—In this first lecture Roberts covers the subject of the causation, etc., of thoracic phthisis. He protests against the modern tendency to regard all questions relating to phthisis too exclusively as a scientific study, regarding no opinion as valuable or authoritative unless it emanated from the pathologic laboratory. We can not settle questions entirely by laboratory studies. The pathology of phthisis, that is, its special microbic origin, is well established, though other pyogenic organisms have their share in producing the disease. He thinks too much prominence is given to the contagion of consumption and this has a material influence on social, commercial, professional and practical life. Actual experience does not bear out the public fear which has been roused on the subject. He does not, moreover, seem entirely hopeful as to the extermination of tuberculosis. The vitality of the organism and its general distribution is too great. The various methods of infection are discussed. He thinks there is an exaggerated idea of direct infection and the experience of Brompton Hospital, with which he is connected, bears out this belief. Still there are occasional instances which seem to point very strongly to it. Auto-infection of the lungs may occur from tuberculous infection anywhere else and a latent focus is very often its cause. Heredity, he believes, has more to do with the subject than modern teaching would seem to indicate, but he would not wish to have people think that because they came of sound stock they are out of danger. Diathesis and temperament are also mentioned. People of scrofulous diathesis have certainly a predisposition in a marked degree to tuberculosis. The temperament does not seem to have much to do with the disease, nor has he been able to associate it with any particular facial physiognomy. Persons of robust type and apparently excellent health sometimes may be subject to the disorder. The various causes acting on the general system are reviewed, including insanitary conditions, deficiency of proper nutriment, intemperance and general debauchery, occupation, conditions which cause a more or less constant drain on the system, such as rapid childbearing, prolonged lactation, menorrhagia, and chronic diarrhea, and lastly, mental depression from causes of various kinds, such as worry and overwork. Each of these is discussed in detail. Traumatism is not infrequently the cause. Alcohol is a notable cause, and he suggests that excessive smoking may be a factor. He lays some stress on the excessive cough, which he thinks has a damaging effect on the lungs, and excessive use of the voice may predispose to phthisis. He has met with cases where hemoptysis resulted from a definite and powerful strain in running, swimming, etc., and from a blow on the chest in persons apparently healthy, and from various conditions, such as pneumonia, chronic bronchitis, pleuritic conditions, pressure on the trachea, etc. Whooping cough, measles, grip, etc., and their well-known relation to phthisis, are mentioned; it occasionally follows enteric fever and other acute diseases. Congenital syphilis sometimes predisposes. As a secondary event it may be associated with diabetes, prolonged indigestion or anything affecting the consumption or assimilation of food, chronic cardiac disease and various nervous disorders. He believes, however, that the idea of some authorities that gouty predisposition is hostile to tuberculosis, and that when the disease occurs among gouty patients its course is much modified and makes but little progress and, as a rule, tends to obsolescence, may be correct. There is a sound foundation, he believes, for these statements. The combination of causes in most cases should be considered. It is often not possible to refer the onset of thoracic disease to any distinct and recognizable exciting cause. He would warn against the modern tendency to ignore altogether the old-fashioned ideas as to the danger of getting wet, chilling, exposure to cold, wind, etc. In conclusion he says he does not share in the extraordinarily hopeful views now so widely entertained and freely expressed as to the final eradication of this terrible scourge. Still we can do a great deal to better matters, and the prevention of infection is of first importance. He would like to see more stringent measures taken as regards the habit of spitting, etc.

9. **Staphylococcus Serum Injections.**—Wright has investigated the subject of the use of staphylococcus serum in cases of furunculosis, etc. He says if we consider the matter rightly we will see that the process of bacterial inoculation, as applied to a patient who is the subject of bacterial invasion, is in reality a process of temporarily taking away from the patient's power of resistance in view to his receiving back the power with usury. In short, it is the process of trading upon the patient's balance of resistance, and it will be wise to inform ourselves beforehand in regard to the resisting powers of the patient. He gives a report of cases with careful examinations of the blood and finds that there are rather favorable results obtained from his anti-staphylococcus vaccine. It may have some value, he thinks, in abnormal vaccinia, and also in the treatment of old ulcers, sinuses, etc. In inoculation it is important to graduate the doses and so to time the injections as to leave to the infected patient in any negative phase which may supervene after inoculation a sufficient margin of resistance to safeguard him against any generalization of his infection. We may keep in view the fact that patients who have

been suffering from long-continued localized inflammatory processes would seem, so far as can be judged from clinical experience, to have acquired a defensive power such as suffices to ward off the more generalized forms of their particular infections and that where bacterial invasions manifest themselves only under the form of "surface-invasions" the conditions in the interior of the organisms must be assumed to be hostile to the growth of the invading micro-organisms. This suggests the desirability of testing the effect of therapeutic inoculations of sterilized streptococcus cultures in the case of patients subject to indolent and relapsing forms of erysipelas, bearing in mind that the streptococcus has a much greater capacity for generalizing itself in the organism than the staphylococcus. A consideration of these facts also point to the "desirability of determining whether any therapeutic advantage could be derived from the inoculation of the appropriate bacterial vaccines into patients suffering from chronic 'surface-invasions.' There would be opportunity of applying such inoculations in connections with the treatment of bronchitis, ozena, gleet, leucorrhea, and those forms of the bacteriuria which depend upon a bacterial invasion of the mucous membranes of the genito-urinary tract. It would, of course, be necessary in each case, after determining the particular species of invading micro-organisms which was giving rise to trouble, to consider: 1, the question of technique in connection with the preparation of the vaccines; 2, the question as to whether the particular invading micro-organism possessed any power of generalizing itself in the system; and 3, the question of the resisting and reacting power of the particular patient. In connection with the estimation of these last, the methods of estimating the bactericidal power of the blood which have been described by myself and the method of estimating the phagocytic power of the blood which has been described by Major Leishman are, I think, capable of rendering services."

18. **Remote Results of Surgical Intervention in Traumatisms of the Urethra.**—Guyon warns against immediate repair of the urethra in case of severe traumatic laceration. The intervention should bear the remote results in mind, and the formation of constricting cicatrices be carefully guarded against. He describes three instructive cases. In two the operation was supposed to be very successful at first. The urethra was resected and defect repaired with adjacent tissues, but the remote results proved disastrous. Autoplasty with superposed flaps, the raw sides facing, proved very satisfactory in the one case in which it was done. The results are still excellent after fourteen years.

21. **Preventive Injections of Antidiphtheria Serum.**—Netter reiterates that preventive injections of serum have a pronounced prophylactic effect and have never occasioned any serious accidents. The only inconveniences that have ever been noted are a transient eruption or a few pains in the joints. Unfortunately, the immunity conferred does not commence before twenty-four hours and wears off by the end of three or four weeks. When children have been exposed, the conditions of the environment determine the necessity for these injections. If they can be kept under surveillance by the physician and the sick child has been isolated from the rest of the family, they are not necessary unless positive results are obtained from the nasal and pharyngeal mucus. But under other circumstances, in schools, hospitals, etc., when a case of diphtheria occurs, the other children should receive these preventive injections. Even in the absence of established diphtheria, in measles and scarlet fever wards, they ward off possible diphtheria infection, which is always serious as a complication of these diseases. Heubner has established that twice the dose of serum is required for a little patient with measles, and the immunity conferred lasts only fifteen days on an average. Richardière's experience is conclusive in this line. During the first 4 months of 1901 2 to 4 cases of diphtheria occurred each month in the measles ward and during the following 6 weeks 19 cases developed. The system of preventive injection of every child entering the ward was then adopted and there has not been a single case since. The dose injected was 5 to 10 c.c. of Pasteur Institute serum. Heubner injects 250 units and 500 in measles. In the few rare cases in which diphtheria has occurred, notwithstanding the preventive injection, it was especially mild.

22. **Surgery of the Heart.**—Fontan reports 2 cases of stab wounds of the heart on which he successfully operated, and Le Dentu supplements his communication by a summary review of 36 other cases of surgical intervention on the heart which he has been able to collect. One operation was undertaken to ligate an isolated injury of certain vessels of the heart. Four were restricted to immediate or tardy tamponing of the organ, with 3 recoveries. Four were non-penetrating wounds and 3 were sutured. All recovered. Twenty-nine were penetrating wounds and 8 recovered after suturing. Five of the deaths occurred on the operating table. Out of the 38 cases, 16 were restored to health. Laforgue has recently reported 17 recoveries under medical treatment alone in 56 cases of wounds of the heart, that is, recovery in 30.35 per cent. But only 6 of these cases were stab wounds. Nietert asserts that more than 90 per cent. of unoperated wounds of the heart prove fatal. Italian names are most numerous on the list of operators.

23. **Superiority of Colpotomy for Treatment of Pyosalpinx.**—Treub recommends colpotomy as indicated in every case of tumor in the adnexa requiring the knife. In case of recurrence, colpotomy must be done again and again, with vaginal hysterectomy as the last resort. In case of a hydrosalpinx recurring after colpotomy, a conservative abdominal operation may be suggested.

27. **Multiple Strictures of Small Intestine.**—Patel states that the cases of attenuated tuberculosis of the intestines causing fibrous hypertrophy and multiple strictures, have always been relieved by surgical intervention, and in many instances permanently cured. In cancerous or pronounced tuberculous lesions the results are merely palliative. The diagnosis is based on the character of the pains and the way in which the disturbances travel a certain path, always the same, the pains and meteorism recurring at each stricture as the contents of the intestine move along. In case of cancer the patient is generally older, the general condition more depressed and bloody stools more frequent than under other conditions. He reviews 103 cases on record with details of operation and results.

28. **Cancer of Cecum and Sigmoid Flexure.**—Gouilloud recently operated on a cancer of the pylorus and found 25 prune-stones and a number of cherry-stones. In another case of cancer of the descending colon he found two fish bones at the point of the cancer. He is convinced that foreign bodies create at points of lodgment some erosion or cicatrix favoring the invasion of the cancer. The frequency of cancer of the biliary passages in persons subject to gall-stones is another argument that supports this view.

29. **Hepatoptosis and Hepatopexy.**—Judet has collected 90 cases of hepatoptosis and notes that lithiasis was evident in 15. He has also observed 3 personal cases in which cholelithiasis coincided with hepatoptosis. Treatment of the former alone frequently cures both. Cholecystostomy results in the fixation of the liver by the adhesions which form. Immobilization of the gall-bladder and bile duct fastens the liver in place, and after they are drained the congestion of the liver diminishes and with it the tendency to displacement. In doing hepatopexy the fundus of the gall-bladder—even when it is sound—should be sutured to the parietal peritoneum and abdominal wall or fastened to the lobe of the liver by adhesions induced by leaving a wick between for four to six days.

30. **Paramyoclonus Multiplex.**—Murri has had occasion to make post-mortem examination of three typical cases of paramyoclonus multiplex within a few hours after death. In one case there had been no other nervous symptoms, but the tremor was exceptionally pronounced. The findings were much the same in all the cases and cause him to assert that multiple paramyoclonus is always the indication of some morbid condition in the region of the fissure of Rolando. Although no anatomic modifications may be apparent, yet its function is affected and improved technique might reveal changes that escape us now. Paramyoclonus is therefore single as to its

anatomic site, but multiple as to its nature. A number of causes are liable to induce the modification in the region which is the basis of the tremor. It is not a morbid entity but merely a symptom common to various affections involving the region mentioned: epilepsy, hysteria, meningitis, peri-arteritis or micro-encephalitis, etc. If the paramyoclonus appears to be essential, it is merely because we are unable to class the facts observed with any of the morbid processes known to date.

38. **Pathogenesis of Eclampsia.**—Blumreich asserts that he is the first to establish by clinical and experimental research that the brain becomes altered during pregnancy and that it responds with convulsions at this time to comparatively trivial irritation. The alteration may be due to the diversion of the blood to the genital sphere or to the accumulation of toxic substances in the blood. Whatever the cause, the fact of this increased excitability of the motor centers in pregnancy explains why eclampsia is so closely connected with pregnancy.

39. **New Conservative Operation on the Testicles.**—Rasumowsky has performed this operation on four patients and found it effective in retaining function, while the traumatism is slight and the technique not difficult. After total extirpation of the epididymis he made an anastomosis between the vas deferens and the rete testis or the commencement of the coni vasculosi. In two of the cases only the lower half of the epididymis was removed and the vas deferens was implanted in the body of the epididymis above.

40. **Cause of Death in Strangulation of Small Intestine.**—Albeck relates experimental and clinical experiences which show that death is not necessarily due to peritonitis in case of constriction of the small intestine. In many cases it is due exclusively to the action of toxins generated in the constricted portion and the afferent intestine above.

42. **Operations on Gasserian Ganglion.**—Among the 15 operations on the ganglion described in this communication from von Bergmann's clinic, is the case of a woman of 73 who had been treated for twelve years for typical right trigeminal neuralgia. After a number of partial operations the Gasserian ganglion was removed as a last resort. The patient died four days later of meningitis and the autopsy revealed a psammoma the size of a nut in the posterior cranial fossa. The tumor surrounded the trigeminus nerve and the auditory and facial nerves were also slightly involved. As nothing suggested the possibility of a tumor in this case, the fundus of the eye had not been examined. Of the 14 other patients 13 are entirely relieved of pain on the operated and all but one on both sides. The neuralgia recurred in another case, but this apparent recurrence may be due to some cerebral affection. Ten of the patients recovered with no ocular disturbances, but a preceding chronic conjunctivitis in 2 cases developed into a corneal ulcer with loss of vision in one instance. The dreaded keratitis is probably due to the lesser resistance of the eye deprived of its sensory nerve. In 2 cases paralysis of the abducent nerve was noted and slight opacity of the cornea persists in one. Lexer concludes from these experiences and from the operations reported in the literature which are appended in tabulated form, that extirpation of the Gasserian ganglion is the last resort for severe trigeminal neuralgia not to be controlled in any other way. It is liable to be dangerous, but in most cases it accomplishes the desired result. The tables show that 33 of the 201 operated on died, but that 156, that is, 93.4 per cent. of the survivors, were permanently cured by the intervention.

44. **Operative Treatment of Brain Tumors.**—Bergmann describes 4 cases of brain tumors and 2 of brain cysts operated on. Only one survived in each class. One of the brain tumors proved to be a diffuse cavernous angioma; the patient was a robust man of 44 and he bled to death on the operating table as the angioma was incised. There are 6 cases on record in which angiomata of the brain have been successfully removed. Bergmann states that as the head is raised during operations on the brain the dura sinks and the tumor becomes more prominent. He advises operating as soon as the diagnosis is certain.

50. **Scarlet Fever Nephritis.**—Baginsky dwells with great urgency on the importance of preventing the development of dropsy as of vital importance for the prognosis of this affection. He states that he was able to ward off severe nephritis in the children seen not later than the fifth day. The scarlet fever is kept under control with baths and wet packs and the little patients are kept in bed, even in the mild and afebrile cases, and limited to a strict milk diet. Hydrops did not develop in any case under this regime nor severe symptoms of uremic intoxication. None of the children had the disease so severely as those outside. He considers milk the best diuretic, supplemented perhaps by one to three pints of an alkaline water each day. Diuretin with or without digitalis may be indicated in certain rare cases and prove extremely beneficial. Hematuria is not so alarming as it appears. If it persists and there are no contra-indications, it can almost certainly be controlled with a little tannin, a tablespoonful three times a day of a 1 per cent. solution. Mild, afebrile symptoms of uremia can be combated with senna for a laxative, warm baths, with moderate sweats afterward. In case of fever a cold pack for one to two hours may precede the warm bath to advantage. Very severe cerebral symptoms indicate local blood-letting or venesection. Three or four leeches can be applied to the head of even very young children and, supplemented by withdrawal of 60 to 120 c.c. of blood, may accomplish marvels. Cold applications to the head during the warm bath are also useful at times. Injections of chloral or inhalation of chloroform can not take the place of blood-letting, but may advantageously follow it. One must be prepared at any moment with measures against collapse. Persisting albuminuria is due to the atonic condition of the renal vessels, and usually subsides spontaneously when the child gets out of doors. But if the indications of subacute or chronic nephritis persist and increase, Wildunger or Fachinger water and an easily-digested vegetable diet are necessary, with occasional administration of tannin and, if possible, a change of air to a milder climate or watering place. Under prolonged and systematic observance of these precautions most children can be saved from the threatened chronic nephritis. There will always, however, be a few who are left with a chronic nephritis and persisting cardiac defect as the relics of a severe attack of scarlet fever. In the 75 cases on which this communication is based nephritis was noted in 38, uremia in 18, and 5 of the latter died.

58. **Causes of Infant Mortality in Institutions.**—Schlossmann attributes the low death rate in the Children's Polyclinic and Infants' Home at Dresden to the fact that it is the policy of the institution to supply good breast milk to the children regardless of the expense, which is, on the whole, less than anticipated. Only 53 deaths have occurred among the 207 sick infants, a proportion of only 25.6 per cent., which is very much less than in other institutions of the kind in Germany. The 93 healthy children of the wet nurses are not included in the figures. None of these children contracted any severe disease during their stay at the institution.

62. **Growth of Colon Bacillus in Milk.**—Cozzolino reports that comparative tests showed that human milk is far less favorable as a culture medium for the colon bacillus than milk from the cow, goat or ass. The growth of the bacillus is very much checked from the 14th to the 48th hour in human milk, while it flourishes exuberantly in the other kinds. Human milk does not become as acid as the other kinds under the influence of the bacillus.

65. **Embolism of Superior Mesenteric Artery.**—Sievers describes the case of a patient taken suddenly sick with violent pains in abdomen, moderate meteorism, nausea and slight vomiting and death in twenty-nine hours with the clinical picture of intestinal occlusion and collapse. The case terminated before the hemorrhage into the intestines could be voided.

70. **Substitution of the Bromids for Salt.**—Hondo and found that when the minimum of sodium chlorid is ingested and the bromids are administered, the bromin is eliminated much more slowly and in much smaller quantities than when the patient receives the usual proportions of salt in his food.

74. **Simple Means of Locating Foreign Bodies in Brain by Radioscopy.**—Stamm locates the foreign body on the principle of geographical location by parallels of latitude and longitude. He uses for the purpose a narrow strip of flexible sheet metal provided with holes 1 cm. apart. Small nails are inserted in these holes, the points projecting outward, the heads held in place with wax. This strip is placed on the skull, starting from the root of the nose and passing to the base of the skull behind. A bandage of gauze is then wound around the head. The points of the nails pierce the gauze and the latter holds the metal strip immovable. The radiograph is then taken and the strip is then changed to a transverse position and another radiograph taken, the location of the foreign body each time being marked on the skull and its position in regard to the number of the nearest nail. The nails can be removed as convenient for the patient to rest his head. As the strip is radiographed with the skull the pictures can be compared and serve for future reference.

77. **Treatment of Sepsis.**—Wernitz is enthusiastic in praise of his method of rinsing out the body in case of severe sepsis, by slow, protracted irrigation of the intestines with a .5 to 1 per cent. saline solution injected under weak pressure. The reservoir is lowered from time to time to allow the fluid to flow back out of the intestines. The reservoir is then filled with fresh fluid and the irrigation continued. He maintained these injections twelve out of the twenty-four hours in one case of very severe puerperal sepsis. About five liters of urine were voided by the patient during this time. The temperature rose whenever the injections were suspended and fell again when they were renewed. Four were given the next day and the patient entered upon convalescence. The intestinal tract is kept clean by this constant flushing, and its secreting and excreting functions promoted, while the patient sweats copiously. This sweating is merely the overflow of the fluid arriving in such quantities and does not depress the organism. The patient ceases to sweat when the irrigation is suspended. The vascular system is not overloaded as by subcutaneous injection, although about one or two pints are absorbed in the course of an hour. He states that the results of this simple but tedious procedure were marvelous in a case of puerperal sepsis, one of acute peritonitis and two of septic abortion, which is the list of his experiences to date.

84. **Castration by Application of Steam to Uterus.**—Pincus recommends atmokausis as a simple and effective method of abolishing the menstrual function in cases of incurable affections in which the patients are otherwise doomed to a speedy decline. He describes two cases thus treated. One was a young consumptive, a ii-para, the other in Bright's disease, a iv-para, 32 years old. Both had had extremely severe post-partum metrorrhagia at their deliveries, and the indications for avoidance of future pregnancies were vital. The patients were at the prime of the procreative age and the suspension of the procreative faculty and also of the monthly loss of blood was an indispensable condition for long survival. This was accomplished without pain or danger by the application of steam at 115 and 112 C. for a minute in the second case and at 110 for forty seconds in the first, repeated later for forty seconds. No narcosis, no discomfort nor disturbances of any kind were noted. Menstruation has not occurred since in either case. The uterus is completely atrophied and obliterated above the internal os. The function of the endometrium of the fundus is destroyed, but the cervix is intact, and it is possible that a cervical menstruation may still occur.

85. **Posterior Parametritis an Intestinal Affection.**—Mueller asserts that the troubles known as posterior parametritis, periproctitis, pathologic anteflexion, peritoneal adhesions, etc., distinguished by the "uterine syndrome," are generally the result of an affection of the rectum at the point where it is enclosed by the utero-sacral ligaments. They very rarely proceed from the uterus itself.

89. **Toxinemia.**—Kaminer noticed that Ehrlich's iodin reaction of the leucocytes, which does not occur in normal blood, seemed to occur in connection with bacterial processes. He has therefore been studying it in rabbits and guinea-pigs after inoculation of bacteria. He found that the reaction was more intense when the bacterial toxins were injected instead of the bacteria themselves. The only exceptions were the bacillus of fowl cholera which produced no effect, and tetanus toxin. Diphtheria toxin induced a marked reaction and this difference between the action of these two toxins is interesting. Another point established was that it was impossible to obtain the reaction in animals immunized to a high degree against diphtheria. On the other hand, after the iodin reaction was apparent, it was impossible to save the animal by serum treatment. The iodin reaction can probably always be obtained in man when a sufficient number of bacteria or quantity of toxin is circulating in the blood. There may possibly be some connection between the reaction and the leucocytosis observed in appendicitic abscesses. It may aid in the diagnosis of bacteriemia and toxinemia and thus prove of much clinical importance.

91. **Bone Charcoal as Substitute for Iodoform.**—Frommer has been testing bone charcoal which A. Fraenkel has been advocating for the dressing of wounds. The results of his tests were unfavorable.

92. **Gallstone Ileus.**—Karewski points out that the gallstone in the intestines causes an irritation and reflex contraction which may induce the severest symptoms of ileus. The stone may pass along and cause the same symptoms at another point, or if the contraction subsides it may be harmlessly voided. In some cases the irritation induces fatal paralysis of the intestines. The irritation from the stone may lead to perforation and peritonitis. In these cases the stone may be evacuated in some perforating abscess or cause the formation of extensive adhesions with chronic stenosis of the intestines. The stone may dig a diverticulum in the wall of the intestine. In most cases of gallstone ileus the diagnosis has been retrospective, at the operation or autopsy or after the stone has been voided. Even a presumptive diagnosis is impossible in the absence of previous indications of lithiasis. When there is a history of this condition and gallstone ileus is diagnosed, some other cause for the ileus may be disclosed by the operation, such as necrosis of the small intestine, the result of kinking, as in a recent case in his experience. Women are more frequently affected than men, and the subjects are usually over 60 years of age. As the obstruction is generally in the upper portion of the small intestine, after severe symptoms of total occlusion have developed, gas and feces may still be voided from below it. The high location of the obstruction also renders fecal vomiting one of the first symptoms. Gallstone ileus is the only form of obstruction in which fecal vomiting may coincide with natural discharges. The copious vomit contains bile with fecal matters from the small intestine. Another important differentiating point is that the general health does not suffer as in case of ileus from other causes. This is probably due to the fact that the intestine is still slightly permeable and that the circulation of the part involved does not suffer to such a degree. The pulse is more regular and the pains less violent on the whole. The meteorism is less pronounced and less in proportion to the higher location of the obstruction. High obstructions afford the worst prognosis, and thus we are compelled to resort to surgical intervention as soon as it is established that medical measures have none or only transient effect. The more certain the diagnosis of gallstone ileus the more urgent the indications for operation. Only the rapid subsidence of the severe symptoms justifies the postponement of the intervention. Körte lost only 2 out of 7 patients thus operated on. One of these died from collapse and the other was at the seventh day of the ileus and peritonitis had already developed. Even if the stone becomes dislodged it is liable to cause dangerous injury on its further passage through the intestines. Incipient peritonitis is no contra-indication to operation. But the latter may prove ineffective if the intestine has lost its elasticity by too long delay. The operation is alone able to decide the diagnosis—it will perhaps save the patient when a gallstone ileus has been erroneously diagnosed while in fact other irremediable conditions exist.

93. **Specific Treatment of Typhoid Fever.**—Petruschky has been treating typhoid patients for two years with minute doses of dead typhoid bacilli, which he calls "typhoin" for convenience. It keeps for three or four weeks. No inconveniences were ever observed. He injected .5 to 1 c.c. twice a day for three days, gradually increasing to 3 c.c. He first partly fills the Pravaz syringe with a mixture of 5 parts phenol and 8 parts sodium chlorate in 1000 parts distilled water. The typhoin is then drawn into the syringe and the injection is made in the thigh or calf. After the three days of treatment the temperature begins to fall and returns quite or nearly to normal by the end of three more days. In every instance the severity of the disease was mitigated during the treatment. The pulse and sensorium improved and the tongue began to clear up. He found that this treatment was ineffectual when the typhoid was complicated by pneumonia or other severe affections, or was in an advanced stage when treatment was commenced. He observes that not every typhoid culture is adapted for the purpose. He intends to manufacture the typhoin on a large scale.

95. **Results of Surgery of the Kidneys.**—Schmieden reports the tabulated details of 184 operations on the kidney performed by Schede. Five of the 18 cases of malignant tumors have been permanently cured.

98. **Orthopedics of the Ovaries.**—Rose applies this term to an operation performed in two cases. The ovary was found sound but in an abnormal position which had caused severe pains and a tumor-like protuberance. The ovary was restored to its normal position and the abdomen was closed without opening the ovary. Both patients were permanently freed from their disturbances.

103. **Laceration of Intestines from Horse's Kick.**—Riegner has observed fourteen fatal cases of this traumatism and reports one patient who was cured by prompt operation. The success in this case was probably due to the empty condition of the intestines at the time. He urges not to defer the operation on account of shock.

112. **Operative Intervention in Gastric Hemorrhage.**—Kaupe reviews the cases of such intervention which have been published and concludes that the results certainly encourage further attempts in this line, although success is by no means certain, especially if the patient's strength is waning from long-continued hemorrhage from ulcer. Operation should be prompt and must be individualized for each case. Besides the methods commonly in vogue, Witzel has recently been successful in a case of this kind by ligating the large afferent blood vessels without opening the stomach. He found the arteries very much enlarged when the stomach was drawn out. The dilatation seemed to be almost an aneurysm at one point, distinguished further by adhesions, evidently corresponding to the site of the ulcer on the inner side of the stomach wall. He therefore ligated the afferent gastric artery to right and left, and closed the abdomen without further intervention. All hemorrhage was arrested at once, and the patient has been in apparently perfect health during the two years since.

116. **Surgical Treatment of Spasm of the Cardia.**—Cahen describes a typical case of spasmodic contraction of the cardia. An elastic sound could be introduced into the stomach, passing the obstacle, but it was impossible for a single drop of fluid to pass it. There was not a trace of free hydrochloric acid in the stomach then or after the patient had been relieved by gastrostomy. The condition was much improved by retrograde continuous application of the sound, although it proved impossible to keep the cardia completely in repose on account of the swallowing of saliva which accumulated above the contraction in the esophagus. A stout drain tube was introduced through the fistula and left a day at a time. This aided in stretching the cardiac orifice and allowed feeding by the mouth to be resumed. The patient was a previously healthy married man, 35 years old, who became nervously excited over various worries and commenced to vomit frequently. Symptoms of spasm of the cardia soon developed, treated as above described. The stomach fistula healed spontaneously, and for three months his troubles seemed at an end. After this interval his old symptoms reappeared in a mild form whenever he was worried. He was frequently compelled to leave the table and vomit what he had eaten, but he could then return and finish the meal in peace. He has learned to introduce the sound himself and returns to the physician every ten to fourteen days, when he experiences difficulty in eating. The esophagus is then rinsed out. A slight resistance is still noted at the cardia when a thick sound is introduced. Cahen thinks that this spasm of the cardia is similar to vaginismus in its nature, and may be symptomatic or idiopathic. The former or reflex variety is more apt to yield to treatment than the idiopathic which occurs in nervous persons without any local inciting cause.

122. **Experimental Transplantation of Kidney.**—Ullmann's successful transplantation of the kidney in dogs has attracted much attention. He exposed the carotid artery and jugular vein over quite an extent and applied a ligature or clamp on each side of the wound. They were then severed and a tube of magnesium slipped into the stump of each. The kidney was then ablated and the renal vein fitted over the stump of the jugular and the renal artery over the carotid. The clamp was then removed from the carotid artery and at once the blood poured into the kidney. The secreting function continued undisturbed, evidenced by the dripping of urine from the ureter, the stump of which projected through the wound. The physiologic function continued only five days in each case as the animals scratched the spot and induced irritation which obstructed the ureter.

124. **Destruction of Albuminoids in Liver.**—Töpfer excluded the liver in various ways in his experimental research, and reports that the liver alone is unable to decompose the albuminoids. When the liver circulation is cut off from the intestinal circulation the albuminoids remain unchanged.

125. **Treatment of Epityphlitic Abscesses in Douglas' Pouch.**—Pendl reviews 12 cases of this kind operated on at Hochenegg's clinic, and 4 in his own experience. The mechanical occlusion of the rectum by a large abscess in Douglas' pouch causes symptoms which simulate those of generalized peritonitis or invagination. Differentiation is only possible by digital exploration of the rectum. When the abscess is not recognized and evacuated, general sepsis or pyemia may result from its perforation into the peritoneum. It has been stated that these abscesses occur in 30 per cent. of all cases of appendicitis. Attempts to evacuate them through the abdomen may transform a simple into a complicated case with general peritonitis. The simplest and most effective means of intervention is through a sacral or parasacral incision. A rubber drain can be left for ten days and the patient can be dismissed by the fourth week with a small granulating wound in the gluteal furrow as the last trace of the intervention. By this method the peritoneum does not need to be opened. There is no danger of hernia nor of injury to the intestines from the drain. The rectum tolerates it without inconvenience of any kind. No severe hemorrhage has ever occurred by this method. Eight of the patients were between 9 and 13 years of age, 4 between 16 and 21. Three died from pre-existing sepsis.

129. **The Oculo-Pupil Sensory Reflex.**—Varady applies this term to the reaction of the pupil to sensory stimuli such as contact, heat or electricity. Stefani and Nordera have recently been studying it on healthy subjects. The pupil dilates gradually after a single brief stimulus and then suddenly returns to its original size. If the stimulus is prolonged the pupil first dilates and then contracts to a smaller diameter than at first, then it dilates again and gradually contracts once more. The reflex differs from the light reflex principally in that it takes place much more slowly. The reflex is also soon exhausted and it proves impossible to repeat it. For clinical purposes the first dilatation and subsequent contraction is sufficient for the study of the reflex. The stimulus found most effective in tests on 50 subjects was a needle prick, usually in the malar process. The result is more striking in a weak or moderate light. Prompt response to the needle prick shows that there is no organic anesthesia of the part pricked. It is most marked in subjects with a mobile pupil and occurs in cases of functional disturb-

ances in the sensibility the same as in healthy persons, that is, it is present in some and absent in others. It may persist in tabes after the reaction to light is lost. In case of anesthesia of organic origin it is impossible to elicit the reflex, but this is only decisive when it can be induced on the sound side.

133. **Vaccination in Prophylaxis of Pertussis.**—Poschi had vaccinated a large number of infants just before an epidemic of pertussis developed. He noticed that only one of these infants contracted the disease, although all were more or less exposed to it. The one child affected had a very brief attack. He vaccinated a number of older children who were known to be in the stage of incubation, and was impressed by the mildness of the disease when it developed. He noticed, however, that children who had been vaccinated the year before were not immune.

136. **Treatment of Gonorrheal Affections with Guaiacol.**—Bocchi reports ten cases of acute gonorrheal epididymitis and orchitis treated with guaiacol, as recommended by Lenz, in a 10 per cent. vaselin salve. The pain is relieved almost instantaneously and disappears permanently after four or five days. The relief of the pain is more pronounced in the more recent cases. Resolution is remarkably prompt under it and other writers have noticed that the temperature was reduced under this treatment. None of Bocchi's patients were febrile. He has also applied it in two cases of traumatic epididymitis with the same success. The simplicity, convenience and efficacy of this guaiacol treatment render it superior to all other remedies in his experience.

137. **Experimental Proof of Internal Secretion of Suprarenals.**—Salvioli withdrew 8 to 10 c.c. of blood from the suprarenal efferent vein of a dog and injected it into the jugular vein of another smaller dog. This experiment was repeated a number of times and in every instance the small dog exhibited the characteristic variations in the blood pressure, respiration and heart rhythm which distinguish the action of extract of the suprarenals. Similar experiments with blood drawn from other veins failed to produce any such effect.

139. **Methylene Blue in Malaria.**—De Blasi administered methylene blue in 100 cases of malaria with complete cure in 62. He found that it was only effective when the parasite had been circulating for some time in the blood. It seemed to have a tendency in pregnant patients to induce painful contractions of the uterus, and he therefore warns against its use during the last two months of pregnancy. He gave from 20 cg. to 2 gm. in the twenty-four hours, after eating.

142. **Tabes Dorsalis.**—De Britto has been making a careful study of eight cases of tabes. Syphilis was denied in three but was evident in the others. He concludes that tabes is always due to two factors, one is a certain vulnerability of the spinal centers, inherited or acquired, which serves as a predisposing cause. The other factor is some occasional infection or intoxication. Syphilis, pellagra, paludism and intoxication from ergot may serve as this occasional cause.

145. **Experimental Appendicitis.**—Nicolaysen has been studying the connection between enteritis and appendicitis by inducing these processes in animals by bacterial infection. He found that the lesions were similar to those of chronic appendicitis in man. The animals fed on bacteria such as are encountered in human appendicitis developed ulcerations and other profound alterations in the appendix when at the same time the intestinal tract seemed to be intact except for the swelling of Peyer's patches. The lesions in the appendix were more pronounced the longer the animals survived after having been fed on the bacterium coli. The most profound alterations were found at the ninth to the fifteenth day. The lesion most frequently noted was a perforating ulceration.

146. **Transplantation of Tendons.**—Bülow-Hansen collected 75 cases of tendon transplantation in 1900. The results were successful in 75 per cent. The results have been even more satisfactory since that date. He describes fourteen cases in detail, treated by transplantation or a plastic operation on the tendons in case of paralysis, Little's disease, etc. He says that some gain can always be attained, and in many instances it amounts to an actual cure. The circulation of the blood in the parts is much better, warmth substituting the former clamminess of the skin. He uses the finest silk for suturing and applies a plaster cast in over-correction. The sutures in the skin are left for three or four weeks if temperature is normal. The dressings are renewed and left for two to four weeks. Massage is then commenced, combined with gentle resistance exercises.

145. **Polycystic Degeneration of the Kidneys.**—Borelius describes 4 cases of this condition. One was a casual discovery at an autopsy. One ran a latent course until the subject was 70 years old, when he died after a train of symptoms of chronic uremia. In another case the renal tumor developed without symptoms until infection occurred. The fourth case was complicated by renal lithiasis. The diagnosis of polycystic degeneration of the kidney is probable when symptoms of contracted kidney are observed accompanied by enlargement of one or both kidneys. Another type develops with attacks of pain, suggesting calculi. In still another type the symptoms are those of a slowly progressive chronic uremia with palpable tumor in one or both kidneys. In case of unilateral renal tumor it is necessary to exclude all other causes before thinking of polycystic degeneration, but the diagnosis is easier when both kidneys are affected. Lumbar pains and hematuria are frequent symptoms but are not specific. In 3 of Borelius' cases the patients belonged to the same family, father, son and nephew. Others have noticed a family tendency and the frequent coincidence of congenital malformations of various kinds. As cystic kidneys are a *noli me tangere*, their diagnosis is of great importance. In about 25 per cent. of the cases the liver is also affected with cystic degeneration, and tumefaction of this organ may prove a hint for the diagnosis. Functional diagnosis should not be neglected, whenever it is possible. If the daily elimination of urea is below 16 gm., the functional capacity of the kidneys is evidently diminished, and cystic degeneration is probable, but the latter may exist even when the elimination of urea happens to be normal at the time of the tests. In one of his cases the urea was less than half the normal amount, showing that the other kidney was probably degenerated, although only one kidney was palpably enlarged. If this had been removed the results would probably have been disastrous. On the other hand, the proportion of urea remained practically normal in another case, even after extirpation of the degenerated kidney. This result confirmed the previous diagnosis that the remaining kidney was able to substitute the missing organ, although not necessarily entirely sound. Lumbar exploratory puncture may aid in the differentiation. The fluid contents of the cysts frequently contain small concentric bodies similar to the concretions found in the prostate, sometimes rosette-shaped. Borelius does not know of any other renal affection in which these characteristic little bodies are found. Exploratory incision is a serious operation and cost the life of Holländer's patient. Mohr collected 22 cases of extirpation of the kidney on account of polycystic degeneration, with a mortality of 7.

Queries and Minor Notes.

THE AUTOMOBILE.

SPOKANE, WASH., April 2, 1902.

To the Editor:—I note in your number of March 22 an inquiry relative to the best power for automobiles for physicians' use. Having had considerable experience recently in the matter of automobiles, I feel that I can without hesitation advise in favor of the gasoline motor, exploded by an electric spark, for the following reasons: First, that it requires less time to start such a wagon than it does to untie and unblanket a horse; second, that it is the least expensive engine and costs but about one-third as much to run as the steam rig which is its principal competitor. Electricity as a motive power for wagons will never be successful from the standpoint of economy, comfort, endurance, etc., until a light storage battery shall have been perfected, also a battery that will not leak power when the wagon is not in use and one that can be charged quickly. Under the most favorable circumstances

it requires from twelve to twenty-five minutes to start a steam wagon, and, in addition to the large quantity of gasoline required for generating steam, a considerable quantity of water must also be used, which can not be easily replaced under all circumstances. In buying a gasoline motor wagon, however, it should be remembered that most all manufacturers are making two distinct varieties of wagons, each for a specific purpose. One is a light rig called a runabout, weighing about eight or nine hundred pounds with four or five horse power, suitable for two persons on light grades or level roads, where there is little or no mud. The other is a heavier wagon, with six or eight horse power, usually containing two seats, called a touring car, costing a great deal more to operate and too cumbersome, noisy and expensive for city work. Bearing all these facts in mind, being careful to go to a well-established manufacturer, it is safe to purchase and use an automobile in the practice of medicine. Yours very truly,

C. P. THOMAS.

New Patents.

Patents of interest to physicians, etc., March 18, 25 and April 1:

695,470. Syringe. Young M. Milam, Lake Charles, La.
695,761. Vaccination shield. Josiah C. Peacock, Philadelphia.
695,496. Invalid's robe. Adeline Schermerhorn, Troy, N. Y.
695,657. Ozonizer for wounds, etc. Robert F. W. Smith, London, England.
695,658. Ozone inhaler. Robert F. W. Smith, London, England.
696,158. Atomizing apparatus. Wm. A. Barton, Jersey City, N. J.
695,927. Casein solution. Wm. A. Hall, Bellows Falls, Vt.
696,342. Combined face steamer and inhaler. Henry C. Karpenstein, Brooklyn, N. Y.
696,105. Disinfectant. Abiel W. Nelson, New London, Conn.
696,123. Surgical dressing. Henry P. Weidig, Newark, N. J.
696,538. Catamenical bandage. Heinrich Bauer, New York City.
696,722. Physicians' examining chair and table. Robert P. Curtis, Columbus, Ohio.
696,802. Adjustable invalid mattress. Maggie Dambaun, Des Moines, Iowa.
696,728. Syringe. Richard H. Eddy, Providence, R. I.
696,441. Bag for remedial applications. Franklin C. Holmes, Chicago.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., March 27 to April 2, 1902, inclusive:

Alexander P. Bacon, contract dental surgeon, relieved from the Department of Cuba, to take effect April 30, 1902, and assigned to duty at Fort Clark, Texas.

Henry P. Birmingham, major and surgeon, U. S. A., to represent the Medical Department of the Army at the Eleventh Annual Meeting of the Association of Military Surgeons of the United States, to be held at Washington, D. C., June 5-7, 1902.

George M. Decker, contract dental surgeon, from the Department of Cuba, to take effect April 30, 1902, to duty at Fort Logan, Colo.

William H. Forwood, colonel, assistant surgeon-general, U. S. A., to represent the Medical Department of the Army at the Fifty-third Annual Meeting of the American Medical Association, at Saratoga, N. Y., June 10-13.

William C. Gorgas, major and surgeon, U. S. A., when his services are no longer required in the Department of Cuba, to proceed to Washington, D. C., and report to the Surgeon-General for instructions; also to represent the Medical Department of the Army at the Fifty-third Annual Meeting of the American Medical Association, Saratoga, N. Y., June 10-13.

William E. Hall, contract surgeon, from St. Louis, Mo., to San Francisco, Cal., en route for assignment in the Division of the Philippines.

Jefferson R. Kean, major and surgeon, U. S. A., when his services are no longer required in the Department of Cuba, to proceed to Washington, D. C., and report to the Surgeon-General for instructions; also to represent the Medical Department of the Army at the Eleventh Annual Meeting of the Association of Military Surgeons of the United States, at Washington, D. C., June 5-7.

Frank E. McDermott, contract dental surgeon, former orders directing him to proceed from Webster, Mass., to duty at Fort Crook, Neb., revoked.

Charles F. Smith, contract surgeon, now at Whitehall, Mich., is relieved from further duty in the Division of the Philippines and assigned to duty at Fort Sheridan, Ill.

Arthur C. Stokes, contract surgeon, from Omaha, Neb., to San Francisco, Cal., en route for assignment in the Division of the Philippines.

Eugene R. Whitmore, lieutenant and asst.-surgeon, U. S. A., from Fort Sheridan, Ill., to San Francisco, Cal., en route for assignment in the Division of the Philippines.

Navy Changes.

Changes in the Medical Corps of the Navy, for the week ending April 5:

P. A. Surgeon B. R. Ward, detached from the Boston Navy Yard, and ordered to the *Lancaster*.

Asst.-Surgeon R. A. Bachmann, appointed asst.-surgeon from March 20, 1902, and ordered to the Naval Academy.

P. A. Surgeon E. V. Armstrong, granted sick leave for six months.

Pharmacist C. O'Leary, retired from active service April 25, 1902, having reached the age of 62.

P. A. Surgeon D. N. Carpenter, ordered to Naval Hospital, Newport, R. I., for temporary duty.

Asst.-Surgeon W. E. Griffin, detached from Naval Hospital, Newport, R. I., and ordered to accompany a detachment of marines to the Philippines.

Asst.-Surgeon H. C. Curl, ordered to the Naval Hospital, Mare Island, Cal.

Asst.-Surgeon M. V. Stone, detached from the Naval Hospital, Mare Island, Cal., and ordered to the *Constellation*.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the seven days ended April 3, 1902:

Surgeon H. R. Carter, granted leave of absence for six days from April 1, under paragraph 170 of the regulations.

PROMOTIONS.

Junior Pharmacist Charles G. Carlton, to be senior pharmacist from Jan. 13, 1902.

Junior Pharmacist H. E. Davis, to be senior pharmacist from Feb. 10, 1902.

Junior Pharmacist R. F. Troxler, to be senior pharmacist from March 13, 1902.

Junior Pharmacist J. E. Beck, to be senior pharmacist from March 15, 1902.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended April 5, 1902:

SMALLPOX—UNITED STATES.

California: Los Angeles, March 15-22, 4 cases; San Francisco, March 16-23, 4 cases.
Colorado: Denver, March 15-22, 9 cases.
Florida: Jacksonville, March 22-29, 3 cases.
Illinois: Belleville, March 22-29, 1 case; Chicago, March 22-29, 14 cases; Joliet, March 15-22, 1 case.
Indiana: Evansville, March 22-29, 3 cases; Indianapolis, March 14-21, 21 cases.
Kansas: Wichita, March 22-29, 1 case.
Kentucky: Covington, March 23-30, 13 cases.
Maine: Portland, March 22-29, 3 cases.
Massachusetts: Boston, March 22-29, 15 cases, 4 deaths; Cambridge, March 22-29, 3 cases, 1 death; Lawrence, March 22-29, 1 case; Medford, March 22-29, 1 case; Newburyport, March 15-22, 2 cases; Taunton, March 22-29, 1 case.
Michigan: March 22-29, Detroit, 15 cases; Grand Rapids, 1 case; Ludington, 9 cases.
Minnesota: Minneapolis, March 15-29, 31 cases.
Montana: Butte, March 23-30, 2 cases.
Nebraska: Omaha, March 22-29, 29 cases, 1 death.
New Jersey: Camden, March 22-29, 2 cases; Hudson County, March 23-30, 38 cases, 7 deaths; Jersey City, March 23-30, 25 cases; Newark, March 22-29, 11 cases, 9 deaths; Passaic, March 1-15, 2 cases.
New York: New York, March 22-29, 69 cases, 4 deaths; Yonkers, March 21-28, 2 cases.
Ohio: Chillicothe, March 22-29, 2 cases; Cincinnati, March 21-28, 18 cases; Cleveland, March 22-29, 1 case; Dayton, March 22-29, 1 case; Toledo, March 22-29, 1 case.
Pennsylvania: Lancaster, March 1-29, 3 cases; Philadelphia, March 22-29, 38 cases, 3 deaths; Pittsburg, March 22-29, 5 cases.
Rhode Island: Providence, March 22-29, 2 cases; Warwick, March 24-April 1, 10 cases.
South Dakota: Sioux Falls, March 22-29, 1 case.
Tennessee: Memphis, March 22-29, 5 cases.
Utah: Salt Lake City, March 15-22, 1 case.
Washington: Tacoma, March 16-23, 4 cases.
Wisconsin: Green Bay, March 23-30, 8 cases; Manitowoc, March 1-31, 20 cases; Milwaukee, March 22-29, 3 cases.

SMALLPOX—FOREIGN.

Austria: Prague, March 8-15, 8 cases.
Belgium: Antwerp, March 8-15, 13 cases, 4 deaths; Liege, March 8-15, present, 1 death.
Brazil: Rio de Janeiro, Feb. 9-16, 6 deaths.
Canada: Halifax, March 23-30, 1 case, 1 death; Hamilton, March 1-31, 1 case; Quebec, March 23-29, 11 cases, 1 death.
Colombia: Cartagena, March 10-16, 1 death.
France: Paris, March 8-15, 7 deaths; Rheims, Jan. 5-12, 12 cases, 8 deaths.
Great Britain: Cardiff, Jan. 25-March 8, 1 case; Dundee, March 8-22, 2 cases; Glasgow, March 15-22, 53 cases, 7 deaths; Liverpool, March 8-22, 23 cases, 1 death; London, March 8-15, 450 cases, 81 deaths; Plymouth, March 15-21, 1 case; Sheffield, March 1-15, 6 cases; Southampton, March 8-15, 1 case.
India: Bombay, Feb. 24-March 4, 7 deaths; Calcutta, Feb. 22-March 1, 7 deaths; Karachi, Feb. 23-March 2, 8 cases, 1 death; Madras, Feb. 15-28, 4 deaths.
Italy: Naples, March 1-15, 16 cases, 3 deaths.
Mexico: Mexico, March 9-16, 3 cases.
Russia: Moscow, Feb. 27-March 6, 18 cases, 5 deaths; Odessa, March 8-15, 1 case; St. Petersburg, March 1-15, 15 cases, 3 deaths.
Straits Settlements: Singapore, Feb. 1-15, 1 death.

YELLOW FEVER.

Brazil: Rio de Janeiro, Feb. 9-16, 17 cases.

CHOLERA.

China: March 29, Canton, almost disappeared; Sheshing, sporadic; Tung Mun, sporadic.
India: Bombay, Feb. 24-March 4, 3 deaths; Calcutta, Feb. 22-March 1, 158 deaths.
Straits Settlements: Singapore, Feb. 1-15, 7 deaths.

PLAGUE.

China: Tsang Shing, March 29, 20 deaths.
India: Bombay, Feb. 24-March 4, 856 deaths; Calcutta, Feb. 22-March 1, 347 deaths; Karachi, Feb. 23-March 2, 84 cases, 62 deaths.